



BUILD2LC Project
**Boosting Low Carbon Innovative Building
Rehabilitation in European Regions**

Topic Report:
Professionalization of the
Construction Sector
Version 2

The topic report is a communication action for the general public to show the main conclusions and results of the events being held with stakeholders in relation with BUILD2LC topics.

More info: <http://www.interregeurope.eu/build2lc/>

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1 About BUILD2LC

The recent framework strategy of the “Energy Union” of the European Commission indicates that 75% of European households are energy inefficient. There is also great potential for energy savings in public buildings of the EU. The BUILD2LC project will contribute decisively to achieve the EU energy goals, with its overall objective to increase the energy rehabilitation of buildings, and pave the path that facilitates the transit towards the new standard of nearly Zero Energy Buildings (nZEB).

The key innovative aspect of BUILD2LC is its multidisciplinary approach, that counting on different complementary expertise at Local (Gloucestershire County UK, and Gorenjska SI), Regional (Andalusia ES, Rzeszow PL, NorthWest Croatia HR and Jämtland-Härjedalen Region SE) and National (Lithuania LT) level, will allow achieving the energy goals and a sustainable development of the construction sector, based on improving the competitiveness, generating qualified employment, promoting innovation, and alleviating fuel poverty, in line with the European objectives for smart, sustainable and inclusive growth.

The project, with a high replicability impact will design innovative financial instruments, adapted to the needs of citizens, new mechanisms that contribute to a more competitive business network, special programmes to support innovation, and innovative collaboration actions, focusing on vulnerable groups. Homeowners, business sector, policy makers, local authorities, knowledge institutes and vulnerable groups will benefit from the project.

BUILD2LC will develop a complete learning process to facilitate an effective knowledge flow among regions, with a bottom-up approach methodology, counting on the regional stakeholder groups. More than 70 best practices and almost 70 events involving nearly 400 stakeholders, will establish 7 different Regional Action Plans covering a population of more than 15 million inhabitants and improving energy efficiency over 25% at the participating regions.

Aims

The main objective of the BUILD2LC is **to increase the energy rehabilitation of buildings to reduce energy consumption and enhance policies to favour the creation of a market of specialised companies in this sector**. To achieve this objective, it is necessary to reinforce the competences of partners in the following sub-objectives:

1. Encourage the demand and promotion of investments, facilitating that citizens undertake energy rehabilitation activities.
2. **Promoting the competitiveness of the business network: reformulating business models (ESCOS) and integrating all actors in the value chain of the energy rehabilitation sector.**
3. **Improve the skills of workers aimed at new market niches of energy rehabilitation of buildings.**

4. Encourage innovative solutions, the use of new materials, boosting public procurement, and the cooperation between companies and knowledge institutes.
5. Eliminate barriers that impede the rehabilitation of buildings, especially those of a normative or administrative nature.

Therefore, the exchange of experiences between partners, some of them occurred during this Interregional Thematic Seminar will be aimed at:

- ✓ Designing new, more flexible, transparent and innovative financial instruments, adapted to the needs and expectations of society, and considering the cost-benefit effectiveness of the measures, accompanied by innovative collaboration actions with citizens.
- ✓ Enhancing public private partnership for higher leverage of public funds.
- ✓ **Promoting guarantee and operating mechanisms that contribute to the development of a higher quality and more competitive business network.**
- ✓ Boosting mechanisms to support innovation in equipment and systems of higher energy efficiency in buildings with special relevance to the role of public administration and promotion of innovative strategic projects, demonstration projects and pilot projects in buildings.

2 Introduction to the topic *Professionalization of the construction sector*

The construction sector plays an important role in the European economy. It generates almost 10 % of GDP and provides 20 million jobs, mainly in micro and small enterprises. Construction is also a major consumer of intermediate products (raw materials, chemicals, electrical and electronic equipment, etc.) and related services. Because of its economic importance, the performance of the construction sector can significantly influence the development of the overall economy.

The quality of construction works also has a direct impact on the quality of life of Europeans. Not least, the energy performance of buildings and resource efficiency in manufacturing, transport and the use of products for the construction of buildings and infrastructures have an important impact on energy, climate change and the environment.

The competitiveness of construction companies is therefore an important issue not only for growth and employment in general but also to ensure the sustainability of the sector.

The sector could contribute significantly to job creation¹ by increasing its activity in some very promising areas, such as the renovation of buildings and in infrastructure, with support through, for example, appropriate policies to promote demand but also to encourage investment. Thus, the construction sector plays an important role in the delivery of the Europe 2020 Strategy on smart, sustainable and inclusive growth. Furthermore, the Commission's Communication on the **Energy Roadmap 2050**² points out that higher energy efficiency in new and existing buildings is key for the transformation of the EU's energy system.

A sustainable construction sector plays a crucial role for reaching the EU's long term 80-95% greenhouse gas emission reduction objective. According to the **Roadmap for moving to a competitive low carbon economy in 2050**³ the cost-efficient contribution of the buildings sector would be around 40 to 50% reduction in 2030 and around 90% in 2050. The needed investments would contribute substantially to the competitiveness of the European construction sector. The sector has also an important role to play in adaptation to climate change and resilience to natural and man-made disasters by promoting long term disaster proofed investments.

However, the construction sector is confronted by a number of structural problems, such as a shortfall of skilled workers in many companies, low attractiveness to young people due to the working conditions, limited capacity for innovation and the phenomenon of undeclared work. More widely, the current situation of this industry can be characterized by three basic elements:

¹ It is estimated that 275 000 new jobs could be created in the sector by 2020. CEDEFOP 'Skills, Demand and Supply' 2010, p. 96 - http://www.cedefop.europa.eu/en/Files/3052_en.pdf

² <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52011DC0885>

³ <http://eur-lex.europa.eu/procedure/EN/200241>

1. The construction sector is one of the hardest hit by the financial and economic crisis.
2. There is increased competition from non-European operators not only in international markets, but also within the internal market, particularly with regard to infrastructure projects. This external competition does not always operate fairly; EU companies are often faced with far greater costs than non-European companies.
3. Finally, the energy and environmental issues have created a new dynamic among companies and stimulated various public-sector initiatives which have become key factors in market competition. Significant progress has already been made by construction enterprises but achieving the EU's climate, energy and environmental objectives will require significant changes that will be difficult for the sector to tackle without appropriate policy support.

The construction value chain includes a wide range of economic activities, going from the extraction of raw materials, the manufacturing and distribution of construction products up to the design, construction, management and control of construction works, their maintenance, renovation and demolition, as well as the recycling of construction and demolition waste. As such, the construction sector plays an important role in the delivery of the European Union's Europe 2020 goals for smart, sustainable and inclusive growth. It has a direct impact on the safety of workers and on the quality of life. Buildings, infrastructure and construction products have an important impact on energy and resource efficiency, the fight against climate change and in the environment in general.

The main objective of the BUILD2LC project is **to increase the energy rehabilitation of buildings enhancing the implementation and change of policies**. The project is focused on four different topics:

- New financial instruments
- Professionalization of the construction sector
- Activation of demand and combating energy poverty
- Innovation

BUILD2LC addresses in this report the topic **Professionalization of the Construction Sector** which means:

- Supporting a specialised, competitive and innovative business sector linked to energy rehabilitation, fostering the regional cooperation and a greater interaction between clusters and business associations in the project regions.
- Increase the number of qualified workers with enhanced professional skills across Europe in relation to energy efficiency and renewable energy systems and measures in buildings to deliver building renovations which offer high-energy performance as well as new, nearly zero-energy buildings.

⁴ http://ec.europa.eu/europe2020/index_en.htm

All this contributes to the creation and consolidation of quality employment, in line with the provisions of the Regional Strategies for Smart Specialisation (S3) and other strategic planning tools of the regions involved in the project.

Participating regions currently faces specific problems concerning setting up 2020 objectives at the construction sector. Taking a transnational approach is essential to address an issue of such strategic relevance for the European Union as the energy rehabilitation of buildings. This interregional cooperation will enhance greater interaction between clusters and business associations in the project regions, which will facilitate the coordination of interregional strategies to increase their capacities for innovation and market development.

The BUILD2LC project is completely aligned with the EU policies regarding the professionalization of the constructions sector. It shall be highlighted two essential papers defining the EU cornerstone policy structure, the **Roadmap to a Resource Efficient Europe** and the **Agenda for New Skills and Jobs**.

The **Roadmap to a Resource Efficient Europe**⁵ outlines how we can transform Europe's economy into a sustainable one by 2050. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact. It illustrates how policies interrelate and build on each other.

Areas where policy action can make a real difference are a particular focus, and specific bottlenecks like inconsistencies in policy and market failures are tackled to ensure that policies are all going in the same direction. Cross-cutting themes such as addressing prices that do not reflect the real costs of resource use and the need for more long-term innovative thinking are also in the spotlight.

Key resources are analysed from a life-cycle and value-chain perspective. Nutrition, housing and mobility are the sectors responsible for most environmental impacts; actions in these areas are being proposed to complement existing measures since their combined effects account for 70-80 % of all environmental impacts.

The Roadmap states how urgent is improving buildings given that a better construction and use of buildings in the EU would influence 42% of our final energy consumption, about 35% of our greenhouse gas emissions[and more than 50% of all extracted materials; it could also help us save up to 30% water.

The significant improvements in resource and energy use during the life-cycle mean an effort that will contribute to a competitive construction sector and the development of a resource efficient building stock. This requires the active engagement of the whole value chain in the construction sector. Specific policies are needed to stimulate SMEs, which make up the vast majority of construction companies – to train and invest in resource efficient building methods and practices.

The Commission, with Member States, will assess how to support skills investment plans, apprentice schemes and communication on the best resource efficiency

⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0571>

practices in the industry (continuous), take measures, using an 'SME test' where appropriate:

- to stimulate demand and uptake of resource efficient building practices through life-cycle costing and suitable financing arrangements.
- to further widen the scope of the Eurocodes to design criteria related to sustainability.
- to develop incentives to reward resource efficient buildings.
- to promote the sustainable use of wood in construction, (Communication on the sustainable competitiveness of the construction sector, 2011, Communication on sustainable buildings, 2013);

The EU assesses how best to encourage private sector innovation in construction.

On the other hand, the **Agenda for New Skills and Jobs**⁶ seeks how to get an employment rate target of 75% for the 20-64 years age group by 2020: an ambitious commitment to the sustainability of Europe's social model, welfare systems, economic growth and public finances. Building workforce is particularly sensitive to unemployment and under-qualification issues to the seasonal work patterns and traditional low skilled workers. Nowadays, there is a significant shortfall of qualified workers for on-site construction enterprises and to a lesser extent for the construction products' industry. Moreover, education and training systems across Europe display great variety in the degree of centralisation or decentralisation, the structure of training provision, the role of the social partners, financial structures and curriculum content.

It is necessary to better anticipate future skills and qualification needs, to attract a sufficient number of students to relevant construction professions and to create the conditions for a better working environment and career management, for a greater mobility of construction workers and for wider provision of cross-border services. This has to take account of the impact of the ageing of the EU workforce and of the specific occupational health and safety situation of the sector.

The EU can meet this challenge and raise employment rates substantially, but only with resolute action focussing on four key priorities:

1. First, better functioning labour markets. Structural, chronically high unemployment rates represent an unacceptable loss of human capital, especially in the construction sector: they discourage workers and lead to premature withdrawal from the labour market and to social exclusion.
2. Second, a more skilled workforce, capable of contributing and adjusting to technological change with new patterns of work organisation. This is a considerable challenge, given the rapidly-changing skills needed, and the persistent skills mismatches in EU labour market, especially regarding to buildings associate technologies and energy efficiency knowledge. Investment in education and training systems, anticipation of skills needs, matching and guidance services are the fundamentals to raise productivity, competitiveness, economic growth and ultimately employment.

⁶ <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2010:0682:FIN>

3. Third, better job quality and working conditions. There is no trade-off between quality and quantity of employment: high levels of job quality in the EU are associated with equally high labour productivity and employment participation. Working conditions and workers' physical and mental health need to be taken into account to address the demands of today's working careers, which are characterised by more transitions between more intense and demanding jobs and by new forms of work organisation.
4. Fourth, stronger policies to promote job creation and demand for labour. It is not enough to ensure that people remain active and acquire the right skills to get a job: the recovery must be based on job-creating growth. The right conditions to create more jobs must be put in place, including in companies operating with high skills and R&D intensive business models. Policies to exploit key sources of job creation and to promote entrepreneurship and self-employment are also essential to increase employment rates.

Furthermore, the **EU strategy for the sustainable competitiveness of the construction sector**⁷ focuses on five objectives: investments, jobs, resource efficiency, regulation and market access. The EU has put in place a comprehensive legislative and regulatory framework, including corresponding European standards as well as financial tools, information platforms, labelling schemes and other instruments. The EU is a major actor in world trade and supports open markets, clear regulatory frameworks and the removal of barriers to trade. The EU is engaged internationally to open opportunities for sustainable construction, cooperate with its partners in areas of mutual interest and share its expertise.

In light of these policy statements it is mandatory to make better use of EU funds. Cohesion policy contributes already to the development of new skills and to job creation, including in the expanding area of the green economy, but more can be done to fully exploit the potential of the EU financial instruments and regulations that support reforms in the fields of employment, education and training: this means the European Social Fund (ESF) in the first place, but also especially the European Regional Development Fund (ERDF).

The transition to a resource-efficient and low-carbon economy will bring important structural changes in the construction sector: on-site construction and product manufacturers will be confronted with the need for skilled labour, especially regarding near zero-energy buildings. The European Social Fund provides funding for training and education schemes.

For instance, on skills upgrading and matching the ESF can invest in the forecasting and development of qualifications and competences, and support the reform of education and training systems to strengthen their labour market relevance. The

⁷ <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52012DC0433>

exchange of experiences and networking between higher education, research and business centres to address new skills requirements can also be funded. ERDF, on the other hand, supports investments in education infrastructure.

Regarding job creation, the ESF and other EU funds can support the promotion of entrepreneurship, business start-ups and self-employment. Financial engineering can provide the missing link between financial markets and small entrepreneurs.

The New skills for new jobs⁸ agenda, the Green Employment Initiative: Tapping into the job creation potential of the green economy⁹ and the Green Action Plan for SMEs - Enabling SMEs to turn environmental challenges into business opportunities¹⁰ address skills gaps, anticipate future labour market needs and help people to better exploit job opportunities provided by the green economy

It shall be mentioned the Build Up Skills programme¹¹, a strategic initiative which started under the Intelligent Energy Europe (IEE) programme to boost continuing or further education and training of craftsmen and other on-site construction workers and systems installers in the building sector. Build Up's final aim is to increase the number of qualified workers across Europe to deliver building renovations which offer high-energy performance as well as new, nearly zero-energy buildings. The initiative addresses skills in relation to energy efficiency and renewable energy systems and measures in buildings.

Conclusions

Given the importance of the construction sector for the EU's GDP and employment, as well as its role in the achievement of some of the critical climate, environmental and energy-related objectives, the competitiveness of this sector is a permanent political priority.

Furthermore, especially in times of financial and economic crisis, EU policies in the areas of climate change, energy efficiency and renewable energies, in particular in the context of a policy for sustained encouragement of building renovation, should be seen as an opportunity to revitalise business and employment in the construction sector.

⁸ <http://ec.europa.eu/social/main.jsp?langId=en&catId=822>

⁹ <http://ec.europa.eu/social/main.jsp?catId=89&langId=en&newsId=2090&furtherNews=yes>

¹⁰ <http://ec.europa.eu/growth/smes/business-friendly-environment/green-action-plan>

¹¹ <http://www.buildup.eu>

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BUILD2LC, BOOSTING LOW CARBON INNOVATIVE BUILDING REHABILITATION IN EUROPEAN REGIONS, aims at increasing the energy rehabilitation of buildings in Europe, reducing energy consumption and enhancing policies which favour the creation of a market for specialised companies in this sector.

www.interregueurope.eu/build2lc

An interregional cooperation project for improving low-carbon economy policies

Project Partners

Andalusian Energy Agency, Regional Ministry of Employment, Business and Trade, Andalusian Government (AEA) (ES)
 Andalusian Institute of Technology (IAT) (ES)
 North West Croatia Regional Energy Agency (REGIA) (HR)
 The Public Investment Development Agency of Lithuania (NPIA) (LT)
 Rzeszow Regional Development Agency (RRDA) (PL)
 Region Jundland Forplænde (Rift) (DK)
 Local Energy Agency of Gorenjska (LEAG) (SI)
 Severn Wye Energy Agency Ltd (SWEA) (UK)

Low-carbon economy

1.38 M ERDF

Apr 2016 Sep 2020

European Union
European Regional Development Fund

RARR
Regional Agency for
Regional Development

BUILD2LC
Interreg Europe

BUILD2LC PROJECT – „BOOSTING LOW CARBON INNOVATIVE BUILDING REHABILITATION IN EUROPEAN REGIONS”

Interregional Thematic Seminar –
Professionalization of the Construction Sector

Rzeszów, Poland 21 March 2017
 Plenary Session
 Venue: HOTEL RZESZÓW

CONFERENCE ROOM:
 SALA MARSZAŁKOWSKA
 2ND FLOOR

European Union
European Regional Development Fund

3 Interregional Seminar in Rzeszów, Poland

Executive Summary

The Interregional Thematic Seminar on **Professionalization of the Construction Sector** was organized in Rzeszów, in Poland from 21th to 22nd of March 2017 in the frame of BUILD2LC project.

The first day was dedicated to the open Conference, press conference and Pitching Session and B2B for clusters, associations and other entities from partners' regions. The second day, the following study visits presenting best practices on buildings energy efficiency took place:

- The University of Law and Public Administration (energy modernization of the university's didactic buildings)
- The Technology Transfer Center in The University of Rzeszów (functioning of the center and its laboratories)
- ML SYSTEM company – R&D Photovoltaic Research and Development Center.

The conference was attended by 69 people, including representatives of BUILD2LC partners from Spain, Lithuania, the United Kingdom, Croatia, Sweden, Slovenia and Poland, stakeholders from these countries, representatives of Podkarpackie local government authorities, public administration, media, universities, clusters, associations and entrepreneurs operating in the construction sector. Examples of good practices in this area were presented, including various proposals for solutions, threats and dangers, functioning of clusters as examples of cross-sectoral cooperation for the construction industry and renewable energy sources, as well as possibilities of financing actions for the professionalization of the construction sector.

Summary

The second BUILD2LC Interregional Seminar titled **Professionalization of the Construction Sector** was held in Rzeszów, Poland on 21-22 of March 2017 in accordance with the annexed Agenda. The Seminar attracted 69 attendants, speakers and stakeholders from different regions and various institutions, agencies, ministries, the European Commission, companies, professional and business associations, NGOs, municipalities and the other institutions, as well as some representatives from non-partner regions, as from Slovakia, and even non-EU countries as Ukraine.



The following summary collects the main conclusions and outcomes of the seminar, split by sessions and roundtables.

Summary of the Welcome Opening – Session I

- ✓ **Waldemar Szumny from the Podkarpackie Region Marshall's Office** speaks on behalf of the Marshall of Podkarpackie Region, **Władysław Ortyl**. He welcomes all guests from all over Europe and expresses gratitude and his happiness that Rzeszów had a chance to host a meeting on a topic so close to all citizens, namely energy efficiency.



BUILD2LC project is relevant for all EU as it will help to create and identify new financial means of efficient energy, encourage innovative solutions and investment in the construction sector, as well as significantly increase public awareness in the field of energy. He wishes all participants a fruitful and inspiring meeting.

- ✓ **Piotr Zawada, Rzeszow Regional Development Agency (RRDA) member of The Board** welcomed guests on RRDA's behalf – the host project partner. He welcomes the participants, introduces the topic of the seminar and stresses the importance of long-term investments into energy efficiency.



Also, Mr Zawada explains RRDA's priorities, goals, and mission. He encourages the participants to ask questions during the workshop, establish contacts, communicate, to share information with each other and to use time productively.

- ✓ **Joaquin Villar Rodríguez, BUILD2LC Project Coordinator from the Andalusian Energy Agency, Spain,** shows a general view of BUILD2LC, explains the background and aims of the project, and how the partnership is going to work during the project lifetime to achieve them.



Summary of the Session 2 – “Professionalization of the European Construction Sector”

- ✓ **Agata Kotkowska, Head of Buildings and Heating/Cooling Sector Horizon 2020 Energy Unit, EASME (European Commission)** gives a presentation titled *Professionalization of the Construction Sector from the European Energy Efficiency Perspective*.

Mrs Kotkowska starts by explaining EASME's role within the European Commission. She tells about the initiative *Clean Energy for All Europeans*: a focus on building smartness as a proposal for amending the Energy Performance of Buildings Directive.



The following topics about future trends were showed:

- Smart homes.
- e-mobility becoming mainstream
- The need for improved skills across the building sector, there is an expected shortage of qualified building workers by 2020 in most European countries.
- A need for training of the current workforce is much stronger than the estimated need for additional workers, more than 3 million workers would require up-skilling on energy efficiency or renewable energy sources by 2020, o it is very important to design and deploy transferable and cross-trade knowledge and skills.

- ✓ **Włodzimierz Grochal from Swietokrzysko-Podkarpacki Energy Cluster** presents *Cooperation of Universities and Public and Private Sector in the Frame of Construction Clusters – Challenges, Objectives and Benefits*.

Mr. Włodzimierz stresses that the main goal of the Cluster is building a interregional cooperation platform up in the range of widely understood energy efficiency, and especially on



promotion, implementation and spreading of EU energy policy goals on local,

regional and superregional levels. The main objective is to use energy in an effective way and especially in the construction branch. Members of this cluster include local governments, businesses, universities and institutions from Eastern Poland working on the promotion of innovation.

Activities accomplished within Cluster answers the demands of its members to act as a platform for business based on research and expert's knowledge on following fields:

- Transfer of knowledge and technology from EU countries and wide-spreading good examples benchmarking.
- Support development of combined heat and power based on local renewable resources,
- Using innovative technology and raising awareness to decrease the energy demand in buildings and industrial production processes.
- Promotion of innovative solutions to reduce CO₂ emissions.
- Development of education and training to effectively manage energy.
- Elimination of barriers that impede the renewable energies deployment.
- Efficient use of energy resources.

- **Diana Horvat, Head of department, Sector for Energy Efficiency in the Buildings Sector, Ministry of Construction and Physical Planning** makes the presentation titled *Croatia Croskills: Lifelong training plan for building workers*. Mrs Horvat explains the project purposes, background, participating partners and objectives.



Project main motivation:

- Lack of qualified building sector workers in energy efficient retrofitting and construction.
- Lack of institutional specialized education schemes.
- Weak market demand for low energy buildings.
- Lack of national discussion among the relevant stakeholders on the needs and possibilities about building sector workforce.

Project main objectives:

- Development and testing of comprehensive training materials and training curricula for six priority building professions: bricklayers,

plasterers, roofers, carpenters, house-painters and prefabricated construction fitters.

- Establishment of up to six different training schemes and accreditation of training providers - systematic approach to life-long learning of the Croatian building workers, regardless of their previous education and skill levels.
- Establishment of a national certification scheme for six priority professions - proper market evaluation of the qualified workforce and help to increase demand for skilled workers.



Summary of the Session 3 – “Panel on Good Practices of Professionalization of the European Construction Sector”

- ✓ **Anna Pasierb from Podkarpacka District Chamber of Civil Engineers** performs the presentation *The Podkarpackie Low-Energy Consumption Technologies Transfer Centre's Passive House*. She explains how this passive building, the Chamber's headquarters, is being built. The building, also, will serve the developing the business of the Chamber, the distribution of equipment and renewable energy technologies, and the organization of training course, conferences and workshops connected with renewable sources of energy to increase skills and knowledge of the workforce from Podkarpackie Region.



The building design conditions are:

- Passive, zero – energy house.
- Class A of LEMUR priority program.
- Design mainly on the basis of Polish components.
- Annual energy consumption for heating max. - 15 kWh / m².
- Projected primary energy consumption less than 120 kWh / m² annually.

The main conclusions by Mrs Pasierb about passive house and the applied design solutions are:

- Compact design of the building
- High air tightness of interior building partitions
- High thermal insulation of all external partitions
- Proper orientation of windows.
- Suitable selection of windows area
- Effective system of external shading and optimal building construction.

- **Bogusław Kotek from Association of Owners and Managers Homes in Przemyśl** presents *Thermo-modernization of historic buildings within the old town of the city of Przemyśl*. Within the initiative *Revitalization of historical buildings in the town of the old town industry* funded by the ERDF for the Podkarpackie Voivodship (2011-2013), all the buildings included in the project were built before 1900 and have heritage consideration as historic buildings in the register of monuments maintained by the Voivodship Monument Conservator.

Through the design of the wall insulation design, the replacement of joinery and the exchange of heat sources, the energy efficiency of buildings have been improved in a really measurable manner. Thanks to the project, a quarter of the buildings on the board received "new life".



- ✓ **Katarzyna Kowalska and Mr Emilio Rull Quesada from UNIMOS Foundation and Podkarpackie Renewable Energy Cluster** respectively, presents *Cross-sectoral cooperation for raising qualifications of clusters and associations members*.



As an example, it was explained the successful EU-funded *ADELANTE* project to increase the competitiveness, adaptation, potential and internationalization level of micro, small and medium enterprises (SMEs) of Podkarpackie based on the Spanish experiences related to renewable energies development, transition to a low carbon economy and creation of smart cities. The partnership relied on a cross-sectoral approach taking into account renewable energies, ITC, architecture, construction and related sectors, clusters, universities and R&D, public administration and regional agencies.

The ADELANTE project activities included:

- 3 thematic reports,
- 2 participatory workshops,
- Diagnosis of the situation of Polish SMEs and further elaboration of development plans,
- Advisory services for Polish companies related to management, marketing, financing and internationalization processes,
- Training programmers elaborated by Spanish partner and implemented by Polish partners,
- e-mentoring for Polish companies executed by Spanish experts,
- Elaboration of a final casebook and a closing conference.

- ✓ **Agata Kotkowska, Head of Buildings and Heating/Cooling Sector Horizon 2020 Energy Unit, EASME (European Commission)**

performs the next presentation titled *Examples of successful BUILD-UP Skills projects*, an EU-funded initiative aimed at boosting training of craftsmen and other on-site construction workers in the building



sector including on-going implementation of national roadmaps, the set up and upgrade of large-scale qualification and training schemes for blue collar workers across 22 projects in 21 EU countries. Mrs Kotkowska mentioned and explained briefly some examples of successful BUILD-UP Skills projects:

1. **Construye2020 (Spain)**

- Design and implementation of 9 training actions.
- Training simulator: application for mobile devices showing good practices for the different steps in renovation.
- Pilot courses involving 430 workers.
- Outreach campaign in 15 major Spanish cities + national media.
- Campaign: estimated impact → 12 million people.

2. **BUILD UP Skills BEEP (Finland)**

- Innovative training toolbox including:
 - sets of slides and didactic videos in 5 languages (FI, SE, EST, RU, EN),
 - instruction cards for workers self-learning,
 - pilot training for 'change agents' (experienced workers/mentors),
- Training Ambassador: helping to attract workers and companies.

Regarding the **Horizon 2020 Projects on Construction Skills**, Mrs Kotkowska pointed the blue and white collar professionals and the mainstream topics targeted:

- Training of middle and senior level professionals on energy efficiency and renewables in buildings in the Czech Republic and Slovakia (ingREeS).
- Enhancement of skills for engineers and architects to build nearly-zero energy buildings (nZEB) - (MEaS, PROF/TRAC),
- Set-up and upgrade of training curricula for trainers, construction workers, designers and others based on the Passive House concept (Train-to-nZEB),
- Creation and update of qualification and training schemes for the European Qualifications Framework (EQF4), craftsmen and other on-site workers in The Netherlands (BUStoB).

Ms. Kotkowska drew attention to the BUILD-UP portal – the EU portal for energy efficiency in buildings – SKILLS¹².

- **Mr. Paweł Chmura, Podkarpackie District Chamber of Civil Engineers** introduces the presentation titled *Professionalization of skills: Comprehensive improvement of qualifications of civil engineers*. The presentation touched upon the current potential of training for engineers who are currently members of the Chamber, with more than 7.000 licensed engineers from 21 counties in 9 different specialties:

- construction - building construction
- sanitary installations
- electrical installations
- water and land drainage
- road construction
- bridge construction
- railway construction
- telecommunication
- demolition



- ✓ **Mr. Tomasz Pyszczyk – member of Podkarpackie District Chamber of Civil Engineers**, architect of the “Passive Architecture Office” presents *Passive Architecture*. His Office has designed and performed 12 passive buildings, has 5 still under construction and more than 30 already designed.



Mr Pyszczyk compares the costs of building a passive house in relation to a traditional one and tells about the processes of building passive house, pointing out that such buildings are the future in the building construction industry.

¹² <http://www.buildup.eu/en/skills>

Summary of the Session 4 – “Pitching Session”

The moderator invited the audience to listen to several short presentations of firms/clusters/institutions referring to their activity as a way to break ice before the Technical Committee and to facilitate networking and business opportunities:

1. ML SYSTEM S.A. Innovative Photovoltaic Company from Podkarpackie, by **Szczepan Borowy** – Sales Director.
2. IDEA – Institute of Good Ecosolutions “Alternative” Ltd., from Podkarpackie by **Piotr Pawelec** – President.
3. Energy Cluster EKPK, Presov Region, Slovakia by **Alexander Tokarcik** – Director of organization.
4. ClusterCSA – Cluster of Sustainable Building of Andalusia, Spain, by **Enrique Otero** – President.
5. Region Jämtland Härjedalen, Sweden. by **Elin Nirjens** – Competence strategist.
6. Euro-Inversia business facilitator, Warsaw, Poland, by **Emilio Rull Quesada** – CEO.
7. FADECO Contractors, construction business association from Andalusia, Spain, by **Jorge Fernandez-Portillo** – Board member.
8. The Ministry of Environment of the Republic of Lithuania by **Marius Narmontas** – Director of Construction and Territorial Planning Department.
9. Green Building Council (non-for-profit), Slovenia by **Irena Hlede** – CEO.
10. Ministry of Construction and Physical Planning of Croatia by **Diana Horvat** – Head of Department.
11. BETA Housing energy efficiency agency of Lithuania by **Marius Smaidziunas**.
12. Andalusian Cluster of Renewable Energies and Energy Efficiency – CLANER from Andalusia, Spain, by **Isaías Rodriguez** – R&D Director.
13. Subcarpathian Renewable Energy Cluster PKEO by **Grzegorz Wisz** – Cluster Manager.
14. UNIMOS Foundation from Poland by **Katarzyna Kowalska** – Vicepresident.
15. Agency of European Innovations – AEI from Lviv, Ukraine by **Ivan Kulchytsky** – President.
16. PREDA Ltd. from **Wrocław, Poland** by Jacek Walski – CEO.

We shall remark the participation from one stakeholder from a non-partner region – Mr Alexander Tokarcik from Presov Region, Slovakia. There was also a very fruitful interchange of opinions with Mr Ivan Kulchytsky representing the Agency of European Innovations – AEI **from Lviv, Ukraine**. Lviv is a historically and culturally well-connected city to Rzeszów. However, Ukraine does not belong to the EU.

All the stakeholder fiches gathering basic information and contact data are provided as annexes at the end of this document.

Summary of the Session 5 – “Dynamic Session and B2B meetings”

➤ Dynamic Sessions – Technical Committee

This session was intended to foster the interchange of opportunities among the attendants and the contribution to the BUILD2LC project objectives. This session was split into two different discussion tables:

- **Speeding up the competitiveness**, to debate and get ideas on how to increase business competitiveness in the construction sector
- **Tackling the skills up**, on how to accelerate the skills uptake by the construction workforce.

SPEEDING UP THE COMPETITIVENESS

DYNAMIC SESSION FROM THE TECHNICAL COMMITTEE MEETING

Rzeszów, 21th March 2017



FEEDBACK & RECOMMENDATIONS

TECHNOLOGY OPENED A NEW SPACE FOR SMEs TO DEVELOP THE BUILDING SECTOR. WHAT IS THE ROLE OF PUBLIC ADMINISTRATION AND CLUSTERS TO SPEED UP THE COMPETITIVENESS?

- **Role of public administration:**
 - **Learning by doing:** inventorizing the value chain to foster clusterization, providing technical assistance and organizing workshops – This process works while acquiring knowledge about clusters, SMEs needs and challenges to boost development rehabilitation sector and create new products and services.
 - **Leading by example (Swedish model):** building new houses and renovating old in order to push demand and help companies to create innovative solutions. Also supporting companies in knowledge and advise where they can find

financing. Because of local economic reality – territorial distances between companies - holding together companies and stimulating joint growth.

- **Publicity and visibility campaign** to spread energy efficiency issues and raising awareness about innovations in renewable energies in order to help SMEs/clusters to compete with the „old school market” (providing examples of European successful projects, updating knowledge of companies, organization of trainings)
 - **Supporting companies and cluster development** - pushing ideas and articulating cooperation, especially at first stage of development
- **Role of clusters:**
 - Useful platform to exchange market information
 - Appropriate forum to exchange ideas and gather together companies
 - Channel to spread innovations and knowledge as they have access to companies

1. DID CLUSTERIZATION HELP / CONDITIONE THIS PROCCES? EXAMPLES

- Clusters could solve technology transfer problems fostering SMEs development in the field of competitiveness and innovativeness. Currently, big project are executed by big companies and small companies are their subcontractors who really do the work. These small companies should be instructed in the area of innovation and new technologies to implement them in construction projects.

2. INTERREGIONAL COLLABORATION. IS IT POSITIVE? ARE THERE ANY OTHER POSSIBILITIES? IN WHICH WAY IT COULD BE IMPLEMENTED?

- European Cluster Collaboration Platform (<http://www.clustercollaboration.eu/>) as a communication tool is very useful
- It would be recommended to build an European platform that could organize process of cooperation on a concrete area, for instance unifying regional clusters (at regional level), sharing advantages and disadvantages and catalyzing the information.

3. WHICH TOOL DOES A CLUSTER NEED TO BUILD FOR INTERREGIONAL COLLABORATION AND IN WHICH TOPICS IS POSSIBLE TO COLLABORATE?

- **SMEs need the following tools to grow:**
 - Information about the local market, its regulation and public tenders (websites). Translation into English would be an advantage
 - Matchmaking of interregional local partners who can identify tenders, partners and also participate in tenders
 - Sales promotion

- Organization of networking between clusters
- **Synchronization of actions between regional clusters** (for instance, common calendar)
- **Focus on concrete topics in specific period of time**

PARTICIPANTS & FACILITATORS

Public administration

1. Joaquin Villar / Andalusian Energy Agency (Spain)
2. Konrad Fijolek / City of Rzeszów (Poland)
3. Elin Nirjens / Region Jämtland Härjedalen (Sweden)
4. Dragica Lupić / North-West Croatia Energy Agency (Croatia)

Clusters / Business associations

1. Grzegorz Wisz / Subcarpathian Renewable Energy Cluster (Poland)
2. Ivan Kulchytsky / Agency of European Innovations (Ukraine)
3. Alexander Tokarcik / Energy Cluster Presov Region (Slovakia)
4. Jorge Fernández-Portillo Pardo de Donlebun / FADECO Contratistas (Spain)
5. Enrique Otero Benet / Cluster CSA – Sustainable Construction of Andalusia (Spain)
6. Isaías Rodríguez / Cluster CLANER (Andalusian Cluster of Renewable Energies and Energy Efficiency)
7. Grzegorz Łobodziński / Unmanned Systems Cluster (Poland)

Enterprises

1. Ryszard Nowak / Mikno (Poland)
2. Szczepan Borowy / ML System (Poland)

Business support

1. Anna Bialik / UNIMOS (Poland)

FACILITATION:

International cooperation support

1. Emilio Rull Quesada / Euro-Inversia (Spain)
2. Katarzyna Kowalska / UNIMOS (Poland)

TACKLING THE SKILLS GAP
DYNAMIC SESSION FROM THE TECHNICAL COMMITTEE MEETING
Rzeszów, 21th March 2017



SUMMARY

Do we need a Common European curriculum on sustainable construction / renovation / rehabilitation – Sustainable Construction Degree for example?

The main points to consider when addressing this challenge:

- That national differences impact on the required skills and therefore necessary training provision.
- We must not re-invent the wheel
- Work needs to address all of the technical and social and human aspects
- How transferrable are qualifications, curriculum, roll out routes etc.
- Which learners do we aim at and how do we accommodate their needs and the needs of employers in order to make training programmes accessible

There are no current Pan – European Qualifications

What about a train the trainer approach?

- This became a circular point because ... to what standards, competencies, courses would we train them.

Potential Avenues Identified:

- Creating Common Standards (Competency frameworks, private accreditations, awards schemes etc.) that promote skills development
- Creating packages with multiple benefits that generate demand (e.g. Schnider)

RECORD of DISCUSSION

(Poland) – Those in positions of authority need to have aligned goals to those delivering practical action. However differences between regions need to be accounted for, e.g. legislative, climate zones that impact on the skills needs.

(Sweden) Consider the European Qualifying System because this is now developing strands and competencies for sustainable development which should feature in any plans.

(Slovenia) Qualification development is a big piece of work and there are lots of potential levels to work at. It needs a greater level of support so working at a European level could be helpful. In Slovenia the database of knowledge and expertise is being developed as a foundation to this.

(Poland) – agreed...So, maybe we should look at train the trainers.

(UK) Transferring best practice for example through train the trainer from one EU region to another is problematic to fund since programmes for this kind of knowledge transfer no longer running, for example Leonardo Da Vinci (lifelong learning)

(Sweden) – there are examples of train the trainer programmes (under BUILD UP) so maybe there is an opportunity to use this as reference for doing this type of work.

It is probably easier to develop separate courses at national levels. The development of an EU common framework of competencies, could be a useful piece of work.

(Spain) Need to generate uptake amongst young people and make this accessible to people who are not necessarily academic achievers, so including practical skills should be considered.

(Poland) Gave example of the Schneider University – they have a range of learning topics and give certification to students for free - Electrical Industry giving vocational training as part of talent spotting

(UK) Students choose courses that give them opportunities so building courses into multiple other benefits, such as Schneider and promoting them like this is useful

(Slovenia) Courses or competencies need to be kept up to date so it needs a formal process to keep current need to be in place. In our research we find that educational practices have a lot of commonality and understanding these better in order to find common points for development could be a starting point.

(UK) There is no money to add new courses but schools will modify and adapt existing qualifications to accommodate convincing needs.

(General) There is a need for both technical and social awareness skills in order to support energy efficiency measures and achievement of savings.

(Slovenia) How do we address the needs of the building users is a key consideration because of the need to translate technical issues into more basic language?

Would a private seal/accreditation work?

For example, Passive House standard is the same whether needs are for heating and cooling and the standards are the same so widely applicable, could we create a standard?

Awards can be very motivating so maybe there is potential here but needs to be focused on specific sectors.

There are large databases of training courses and information, much of it is free, i.e. through BUILD UP. There may be financial assistance for e.g. ELENA. Is there a realistic opportunity to take advantage of these materials? Could there be a quality mark, to help others take advantage of this?

There will be a framework for Sustainable Construction that is wider than energy efficiency and so this will need to be included in training so the provision would need review before being given a mark of suitability. The future is actually looking to sustainable construction PLUS health, well-being, humanistic influence.

There are certifications BREAM for example, they all include similar things and are useful as analytic tools but this is very process based and it is not the same as giving basic knowledge.

Where is the focus – which age group?

EASME placed focus on improving skills of existing workers. So we should be thinking of this.

However, this needs to be cost effective and accessible for companies to sponsor their employees through this or for the self-employed to be engaged with.

The roll out of qualifications for existing employees is eased by imposing a requirement for the qualification in order to continue to work. Particularly effective as an incentive for the self-employed e.g. MSs for renewable installers.

PARTICIPANTS

Public administration

1. Carlos Serra / Andalusian Energy Agency (Spain)
2. Marius Smidžiūnas / Housing energy efficiency agency (Lithuania)
3. Diana Horvat / Ministry of Construction and Physical Planning (Croatia)
4. Elin Nirjens / Region Jämtland Härjedalen (Sweden)
5. Anneli Kamb / Region Jämtland Härjedalen (Sweden)

6. Milda Misanovaite / The Public Investment Development Agency of Lithuania (Lithuania)

Non-profit bodies

1. Rachel Brain / Severn Wye Energy Agency (UK)
2. Victoria Boynton / Severn Wye Energy Agency (UK)
3. Irena Hlede / Green Building Council (Slovenia)

Enterprises

1. Piotr Pawelec / IDEA Institute of Good Ecosolutions “Alternative” Ltd. (Poland)

FACILITATION:

1. Rachel Brain / Severn Wye Energy Agency (UK)
2. Carlos Serra / Andalusian Energy Agency (Spain)

B2B meetings

Any cluster, association or other entity interested in increasing cooperation activities had the chance to hold bilateral meetings during this session.



4 Study visits

During the interregional seminar in Rzeszów, the BUILD2LC project partners also accomplished two study visits.

Study Visit 1

The first study visit was held in the University of Law and Public Administration (Rzeszów).

Comprehensive use of renewable energy sources – The University of Law and Public Administration (Rzeszów).

During the visit at the University, participants had the opportunity to get acquainted with the scope of works related to the energy modernization of the university's didactic buildings, co-financed by the ERDF in the framework of the Regional Operational Program 2007 - 2013. Group was guided by the University's administrative director - Marek Rogalski.



The innovative energy facilities are based on two different renewable energy sources:

- The first energy source is the heat extracted from the ground, from a depth of over 125 meters (30 wells) of which specialized probe connected to the pump allow the absorption of heat from the ground. This is known as “very low enthalpy geothermal energy” and it is used to reduce greatly the power requirements of heating and cooling given that the heat exchange is performed underground with the soil at a more stable temperature
- The second one is the processing of solar energy - photovoltaics to power low voltage - in total, about 1200 square meters of mono-crystalline panels.

Important elements of this project are the first **electric vehicle charging stations** in Rzeszów, which allow currently for simultaneous charging of up to four vehicles. A total of 40 charging points supported by 840 sq meters PV modules (170 kW) in the main university's car park itself will be deployed.



Participants of the study visit could

check on public screens “in situ” the energy savings generated by the energy modernization investments, showing details of the production and use of electricity generated by the University.

The presentation led to a lively discussion and a series of questions to the representatives of the university in terms of financing, construction and operation of the system.

This investment in sustainable energy has two important functions - said the University's Administrative Director - Mr Marek Rogalski.

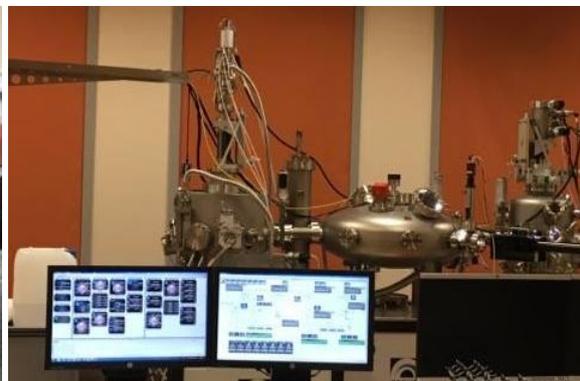


1. First one is the economic function, because with the photovoltaic panels the University can reduce the cost of maintaining buildings in Rzeszów. It is worth noting, that according to the preliminary calculations, the own University contribution to the system will be paid back in 5 years. Some subsidies were put in addition to reach this objective.

2. The second function - paradoxically at the humanities university - is the promotion of innovative technologies. According to the

administrative director, this technology gives the University a certain energy independence.

Then, as an additional element of the agenda, the participants visited the nearby University of Rzeszów and its modern *Technology Transfer Centre*, by its and also the President of Podkarpackie Renewable Energy Cluster - Dr. Grzegorz Wisz. The attendants had an opportunity to become familiar with the functioning of the centre, visit the building and its laboratories.





Study Visit 2

The second study visit was held in the headquarters of the ***Company ML SYSTEM – R&D Photovoltaic Research and Development Center***

The next place of the visit was one of the most modern and innovative Polish companies operating in the field of energy modernization of buildings and production of photovoltaic panels - ML SYSTEM located in Podkarpackie Science and Technology Park AEROPOLIS, managed by RRDA - organizer of the meeting in Rzeszów.



The group was hosted and guided by the Director Mr Szczepan Borowy. During the meeting the participants divided into two groups visited various parts of the company, accessible to the visitors. ML System manufactures BIPV (Building Integrated Photovoltaic) cells and modules and develops an intense R&D activity.

Participants learned more about ML SYSTEM product innovations, company's R&D center, design and prototype center, product development cycle and the entire production chain (from idea to final product sales) and latest trends in the photovoltaic market with examples of ready-made products available on the market.

The presentation of the company's activities and its R&D department aroused significant interest among participants and resulted in a number of questions and additional explanations. The meeting enabled the establishment of contacts between the company and the participants, in particular those representing clusters.



The last part of the study visit took place in the "**AEROPOLIS**" **Technology Incubator**, owned by RRDA. Participants had an opportunity to listen to a presentation on the functioning of the Podkarpackie Science and Technology Park and Technology Incubator carried out by the Manager Mr David Adamski. As a final phase of the study visit the group visited main specialized laboratories.

5 Good practices

The key innovative aspect of BUILD2LC is its multidisciplinary approach, that counting on different complementary expertise at local (Gloucestershire County UK, and Gorenjska SI), regional (Andalusia ES, Rzeszow PL, Croatia and Jämtland Region, SE) and national (Lithuania and Croatia) level, will allow achieving the project goals.

The project achieves its objectives based on a complete learning process to facilitate an effective knowledge flow among regions, with a bottom-up approach methodology, counting on the regional stakeholder groups.

Regions and countries participating in the project identify Good Practices categorized in the four topics addressed by the project. For the BUILD2LC project purposes we consider the definition for Good Practice according Interreg Europe Programme:

Good practices is defined as an initiative (e.g. project, process, technique) undertaken in one of the programme's priority axes which has proved to be successful in a region and which is of potential interest to other regions. Proved successful is where the good practice has already provided tangible and measurable results in achieving a specific objective. Although the Interreg Europe programme primarily refers to good practices, valuable learning also derives from bad practices where lessons learnt can be taken into consideration in the exchange of experience process.

There is no limit on the number of good practices to be collected among the consortium members. As a requisite, a total minimum number of 70 shall be collected, an average of 10 for every region.

Hereinafter we present the compilation of Good Practices for the topic **Professionalization of the Construction Sector**. A Good Practice can potentially match several topics at the same time. A number of 26 Good Practices in the topic has been collected among all the partners.

GOOD PRACTICES IN THE TOPIC ‘NEW FINANCIAL INSTRUMENTS’		
ANDALUSIA REGION		
1	¡Error! No se encuentra el origen de la referencia. A1	Collaborating partner companies in the management of the Incentives Programme for Sustainable Construction in Andalusia
2	A3	A system of verification and monitoring of the Incentives Programme for Sustainable Construction in Andalusia; ¡Error! No se encuentra el origen de la referencia.
3	A4	Participative and open governance of the Sustainable Construction Programme in Andalusia
4	A9	Energy efficiency refurbishment in public social housing in Andalusia
LITHUANIA		
5	L2	Technical Support and Promotion in Multi-Apartment Building Modernization (BETA Agency); ¡Error! No se encuentra el origen de la referencia.
6	L3	¡Error! No se encuentra el origen de la referencia. Quality in Multi-Apartment Building Modernization
7	L5	¡Error! No se encuentra el origen de la referencia. Standardization and Simplification in Multi-Apartment Building Modernization
8	L6	Standardization and Simplification in Public Buildings Modernization
9	L7	¡Error! No se encuentra el origen de la referencia. Complex projects
GLOUCESTERSHIRE REGION		
10	G3	ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis
11	G5	Target 2050
12	G6	¡Error! No se encuentra el origen de la referencia. European Sustainable Energy Award for Prisons (E-SEAP)
13	G8	Link to Energy
14	¡Error! No se encuentra el origen de la referencia. G9	SustainCo (Sustainable Energy for Rural Communities)
15	G10	Your Green Future (YGF)
16	G11	Young Energy People
PODKARPACIE REGION		
17	P3	Podkarpackie Academy Certification
18	P4	Podkarpackie Low-Energy Consumption Technologies Transfer Centre’s Passive House
CROATIA		
19	C5	Inducing change in behavior through energy managers and end-users capacity building - ZagEE project ¡Error! No se encuentra el origen de la referencia.
20	C9	Croskills: Lifelong training plan for building workers
21	C11	Bračak Energy Centre
JÄMTLAND HÄRJEDALEN REGION		
22	J8	Energy Efficiency Support (EES)
23	J9	Education close to zero energy constructions: “Energy lift”
SLOVENIA		

GOOD PRACTICES IN THE TOPIC 'NEW FINANCIAL INSTRUMENTS'		
ANDALUSIA REGION		
24	S6	¡Error! No se encuentra el origen de la referencia. Education "European Energy Manager - EUREM"
REST OF EUROPE		
25	O3¡Error! No se encuentra el origen de la referencia.	Sustainable Campus- Green University
26	O4¡Error! No se encuentra el origen de la referencia.	Casaclima training course for artisans and small enterprises¡Error! No se encuentra el origen de la referencia.

GOOD PRACTICE FICHE **Region: Andalusia**

Title of the good practice:	A1. Collaborating partner companies in the management of the Incentives Programme for Sustainable Construction in Andalusia
Partner region:	Andalusia
Location data	Andalusia

Topic of the practice: Thematic coverage

- Activation of demand and combating energy poverty
- Professionalization of the construction sector

Description of the practice:

Public-private collaboration to facilitate the application to incentives by citizens and companies

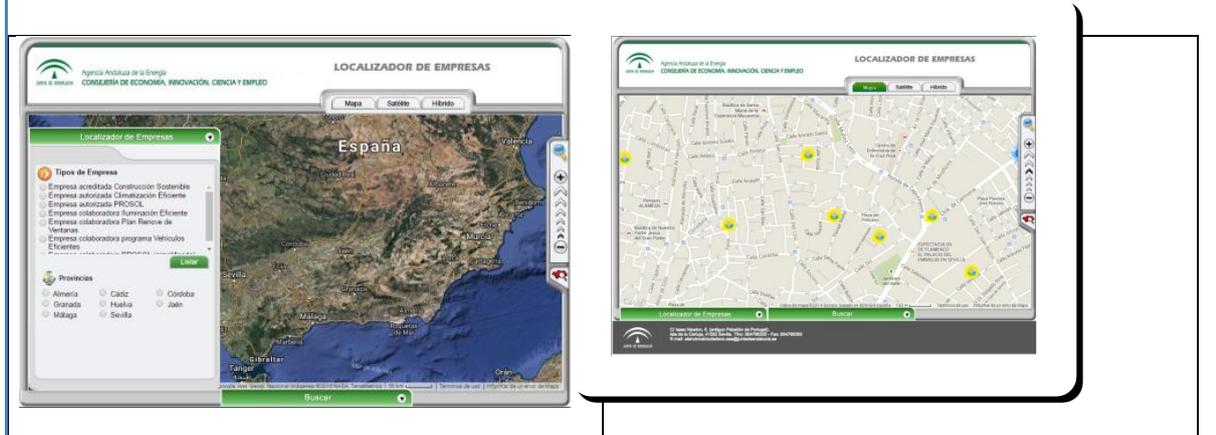
*This GP is part of the **Sustainable Construction Programme in Andalusia – PICSA**. Managed by the Andalusian Energy Agency, financed under the ERDF and totally online, the aim of the programme was to facilitate the rehabilitation of existing buildings through energy saving and efficiency and renewable energy measures and to promote a culture based on the sustainable energy rehabilitation of buildings.*

The Incentives Programme for Sustainable Construction in Andalusia was fully developed with the collaboration of +8.300 private companies, “collaborating partner companies” liaising in integrative public-private collaboration with the Agency in the management and processing of incentives, which **facilitated the administrative procedures to request incentives by end users**. Most of the collaborating partner companies are SMEs, which contributes to generating economic activity in the weaker business environment. The Agency’s website included an **interactive online mapping tool showing the geographical location of the collaborating companies**, to ease the process to find a company freely.

--The Incentives Programme for Sustainable Construction in Andalusia fostered the collaboration between collaborating companies to enable the participation in big projects. Up to 22% of the collaborating companies stated that they usually make business with other collaborating companies belonging to the Programme.

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The resources needed were basically databases, computer applications and management tools. No need of extra funding.



GOOD PRACTICE FICHE

Region: Andalusia



Strengths

- ✓ The end user is free to choose any collaborating company.
- ✓ The collaborating companies helped extraordinarily to disseminate the Programme, multiplying the capillarity of the information.
- ✓ The application process and administrative complexity burden is totally covered by the collaborating company, avoiding a headache to the citizens and, therefore, making easier and more successful the final application of funds.

Weaknesses

- × It is necessary to inform and train the collaborating companies about the incentives scheme and the application process.
- × End users, especially citizens and domestic users, lose perspective of the origin and aim of the grant funds and are not always informed about by the company.

Areas of improvement and lessons learned:

Improve the training of collaborating partner companies regarding the documentation requirements needed for justification purposes.

- Better training and information on the elements of the Programme management is needed, particularly those relating to justification tasks “ex post”.
- It is needed to reduce the payment periods to decrease the financial burden supported by the collaborating companies.
- High percentage lump sums on subsidies (some cases around 70% of the total investment sum) may introduce distortions on market mechanisms.

Performance indicators linked to the practice

Data come from the general performance of the Incentives Programme for Sustainable Construction in Andalusia.

- Number of households engaged in support programmes: 60.000. Benefited groups included 60.000 citizens, 600 neighbourhood communities and 2.500 companies, many of them SMEs.
- (kWh) Annual energy savings in households: **422 million kWh/year** (26.000 toe) primary energy saved or diversified through low-carbon energy sources.
- (%) Reduction of the use of fossil fuels in the building sector. No data available at the

GOOD PRACTICE FICHE

Region: Andalusia

moment.

Indicators of success linked to the practice:

- Management model relied basically on the collaborating companies: up to 90% of developed actions.
- 86.000 ton/year CO₂ avoided.
- +36.000 energy improvement actions have been carried out.
- Total investment outcome: 258 million Euro.
- Total energy economic saving: 320 million Euro.
- Increased activity (+93%) and incidence in the creation and / or maintenance of employment in the companies (+60%). **20.000 direct jobs** have been created and/or maintained.
- Better strategic competitive positioning towards the creation of value and improvement of business development (+74%).
- +8.300 collaborating partner companies, most of them SMEs. 1.600 for first time, fuelled by this incentives programme.
- 22% of the companies stated that they worked in collaboration with other participating companies in the Programme.
- 43% of the collaborating companies carry out other economic activities types of actions that are different to the total of 48 included in the Programme (not covered by the programme).
- **+7.000 households affected by, or in risk of suffering energy poverty** consequences, were targeted and benefited.

Regarding the collaborating companies:

- More than 70% indicate that the most positive elements of the Programme are its contribution to the development and/or maintenance of the companies of the sector, as well as the creation/maintenance of employment.
- 75% say that the Programme had an “excellent, very good or good” impact on their company.

Regarding the beneficiaries:

- Almost 85% say that the Programme has contributed to raising their awareness of the energy consumption of their households/buildings, and the need to adopt energy improvement measures.
- 97% have recommended or would recommend to other users the need to undertake improvement measures in their households and/or buildings and admit that the action implemented has affected in the degree of comfort or quality of life.
- 91% of beneficiaries value overall the Programme as very satisfactory.

Evidence of success.

Private companies are, likely the most benefited stakeholders of implementing energy efficiency investments. The collaborating companies helped extraordinarily to disseminate the Programme in their own interests, and were highly responsible of the fast depletion of the funds (only some days). Positive statements by the beneficiaries by surveys show that the public-partnership agreement works in the right way.

Also the vulnerable households suffering poverty fuel, as those supported by low income families were benefited from subsidies to tackle poor energy efficiency and, this way, increasing health conditions and thermal comfort.

The experience will be extended with the call for new collaborating partner companies to certify the impact and adequacy of the actions in the next Incentives Programme call.

GOOD PRACTICE FICHE

Region: Andalusia

Factors that might hamper the transfer:

The triangle of actors is formed by beneficiaries, collaborating companies and a donor entity, better if it is public or for non-profit organization. This organization, ideally an energy or development agency should exist in the receiving partner.

It is needed to inform the companies through informative meetings. Since the number of stakeholders might be high, competent clusters or private associations are needed as speakers of a lot of collaborating companies.

Time required to complete the BP	6 months
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Contact details to obtain further information on the practice

Contact name	Joaquín Villar
e-mail	joaquin.villar@juntadeandalucia.es
Organization	Andalusian Energy Agency
Type of Organisation	Regional public government energy agency
Website	www.agenciaandaluzadelaenergia.es/know-the-agency

GOOD PRACTICE FICHE		Region: Andalusia
Title of the good practice:	A3. A system of verification and monitoring of the Incentives Programme for Sustainable Construction in Andalusia	
Partner region:	Andalusia	
Location data	Andalusia	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector 		
Description of the practice:		
<p>Evaluation of the Incentives Programme for Sustainable Construction in Andalusia. The evaluation results of the Incentives Programme for Sustainable Construction in Andalusia provided valuable information about positive elements and, as well, areas of improvement.</p> <p><i>This GP is part of the Sustainable Construction Programme in Andalusia – PICSA. Managed by the Andalusian Energy Agency, financed under the ERDF and totally online, the aim of the programme was to facilitate the rehabilitation of existing buildings through energy saving and efficiency and renewable energy measures and to promote a culture based on the sustainable energy rehabilitation of buildings.</i></p> <p>The Incentives Programme for Sustainable Construction in Andalusia was fully developed with the collaboration of +.8.300 private companies, “collaborating partner companies” liaising in integrative public-private collaboration with the Agency in the management and processing of incentives, which facilitated the administrative procedures to request incentives by end users. The programme benefited 60.000 citizens, 600 neighbourhood communities and 2.500 companies, many of them SMEs.</p> <p>The Andalusian Energy Agency set a protocol to evaluate the collaborating companies’ performance as well as the satisfaction of the beneficiaries with the purpose of getting the positive elements together with potential areas of improvement for the next programme call.</p> <p>The Agency made an ex-ante evaluation of the Programme and compared these preliminary results with the opinion of both collaborating companies and beneficiaries.</p> <p>The resources needed were surveys based on own online tools and telephone interviews.</p>		
Positive elements:		
Regarding the collaborating companies:		
<ul style="list-style-type: none"> ✓ More than 70% indicate that the most positive elements of the Programme are its contribution to the development and/or maintenance of the companies of the sector, as well as the creation/maintenance of employment. ✓ 75% say that the Programme had an “excellent, very good or good” impact on their company. 		
Regarding the beneficiaries:		
<ul style="list-style-type: none"> ✓ Almost 85% say that the Programme has contributed to raising their awareness of the energy consumption of their households/buildings, and the need to adopt energy improvement measures. ✓ 97% have recommended or would recommend to other users the need to undertake improvement measures in their households and/or buildings and admit that the action implemented has affected in the degree of comfort or quality of life. 		
91% of beneficiaries value overall the Programme as very satisfactory.		

GOOD PRACTICE FICHE

Region: Andalusia

Areas of improvement and lessons learned:

- × Improve the training of collaborating partner companies regarding the documentation requirements needed for justification purposes.
- × Better training and information on the elements of the Programme management is needed, particularly those relating to justification tasks “ex post”.
- × Conduct a pre- and post- analysis of the energy impact of the action performed.
- × Facilitate additional funding.

Performance indicators linked to the practice

Data come from the general performance of the Incentives Programme for Sustainable Construction in Andalusia.

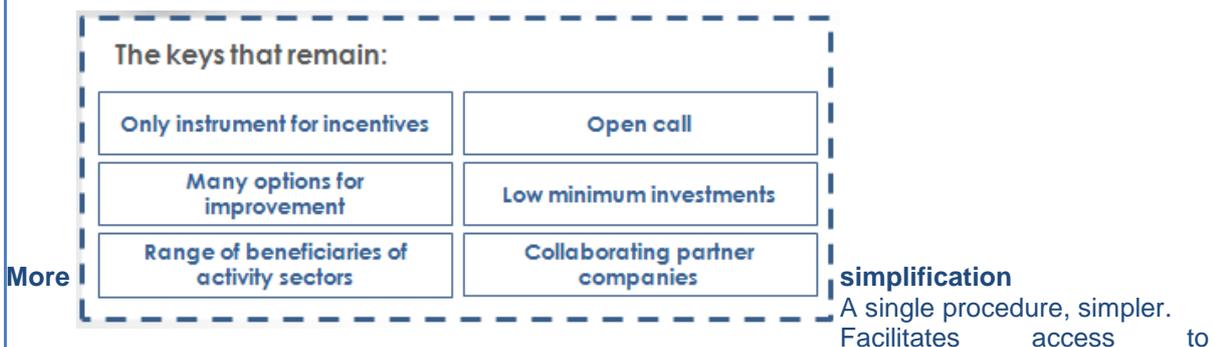
- Number of households engaged in support programmes: 60.000. Benefited groups included 60.000 citizens, 600 neighbourhood communities and 2.500 companies, many of them SMEs.
- (kWh) Annual energy savings in households: **422 million kWh/year** (26.000 toe) primary energy saved or diversified through low-carbon energy sources.
- (%) Reduction of the use of fossil fuels in the building sector. No data available at the moment.

Indicators of success linked to the practice:

- Management model relied basically on the collaborating companies: up to 90% of developed actions.
- 86.000 tons/year CO₂ avoided.
- +36.000 energy improvement actions have been carried out.
- Total investment outcome: 258 million Euro.
- Total energy economic saving: 320 million Euro.
- Increased activity (+93%) and incidence in the creation and / or maintenance of employment in the companies (+60%). **20.000 direct jobs** have been created and/or maintained.
- Better strategic competitive positioning towards the creation of value and improvement of business development (+74%).
- +8.300 collaborating partner companies, most of them SMEs. 1.600 for first time, fuelled by this incentives programme.
- 22% of the companies stated that they worked in collaboration with other participating companies in the Programme.
- 43% of the collaborating companies carry out other economic activities types of actions that are different to the total of 48 included in the Programme (not covered by the programme).
- **+7.000 households affected by, or in risk of suffering energy poverty** consequences, were targeted and benefited.

Evidence of success.

The data collected helped to give shape to next Programme calls, both on the factors that stay and the implementation of improvement areas:



GOOD PRACTICE FICHE

Region: Andalusia

incentives, fewer documentary obligations.
New classification of actions, clearer and more complete.

Better energy culture

New technical conditions of energy saving and satisfying needs.
Possibility of opting for more sustainable, energetic and environmental solutions.

More guarantees

Clear delimiting of conditions, and audits, projects as eligible costs.
New collaborating partner companies that certify the impact and adequacy of the actions.

Also it was detected the need to establish new categories as proposals for energy improvement, e.g. smart solutions for energy management, energy management in the digital home, towards nearly zero energy buildings, e-vehicles of public interest, etc.

Factors that might hamper the transfer:

The triangle of actors is formed by beneficiaries, collaborating companies and a donor entity, better if it is public or for non-profit organization. This organization, ideally an energy or development agency should exist in the receiving partner.

Getting replies to a survey is always hard. We suggest “carrot measures” as to link the achievement of the final approbation of the grant to answer correctly the questionnaire.

Time required to complete the BP

One month

Contact details to obtain further information on the practice

Contact name Joaquín Villar

e-mail joaquin.villar@juntadeandalucia.es

Organization Andalusian Energy Agency

Type of Organisation Regional public government energy agency

Website www.agenciaandaluzadelaenergia.es/know-the-agency

GOOD PRACTICE FICHE		Region: Andalusia
Title of the good practice:	A4. Participative and open governance of the Sustainable Construction Programme in Andalusia	
Partner region:	Andalusia	
Location data	Andalusia	
Topic of the practice: Thematic coverage <ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector 		
Description of the practice: <p>The Sustainable Construction Programme in Andalusia (PICSA) seeks through energy saving and renewable energy to promote the energy refurbishment of buildings, rehabilitate urban areas, improve the competitiveness of companies of the construction sector, create skilled employment and reduce energy poverty.</p> <p>The Programme consists of three main actions:</p> <ul style="list-style-type: none"> ▪ An incentive scheme funded with €116 million and 48 eligible actions to facilitate the energy refurbishment of existing buildings, mobilizing €258 million of total investment outcome. ▪ Implementation of a financing line, specifically through revolving funds for companies. ▪ Creation of the “Sustainable Construction Round Table” involving more than 70 experts from different disciplines. ▪ <p>The Sustainable Construction Round Table - establishing an expert network.</p> <p>The Sustainable Construction Round Table brings together more than 70 experts (stakeholders) from different disciplines: private companies and professionals gathered in clusters and professional associations, economic and social agents, technological institutions, universities and civil organisations (mainly consumer and environmental). They work together and pool their knowledge about key industry issues including its competitiveness, supply and demand, renewable energy, innovation, employment and legislation. This way the public authorities, headed by the Andalusian Energy Agency as Secretary entity, open the elaboration process to the public even before getting public the Plan itself to be submitted to public scrutiny with the objective to elaborate a Development Plan for the Sustainable Construction and Rehabilitation of Andalusia, Horizon 2020, for the creation and consolidation of a new model in the construction sector based on these themes.</p> <p>The work has been coordinated by the Andalusian Energy Agency, which had also a participatory virtual platform where interested parties could submit their contributions. This is a forum for expert discussion, based on the need to split construction from speculation, and take sustainability as a catalyst for economic recovery and job creation. It is necessary to highlight that a high consensus was reached among all participants.</p> <p>The stakeholders were not only important, but essential to set the Programme on a transparent and</p>		
		

GOOD PRACTICE FICHE

Region: Andalusia

participatory basis. From the very beginning of the Programme design process, they were invited to participate trying to maximize the benefits of an **open governance process**. This was the way to enable and involve any interested relevant stakeholder to add to the creation of the Plan. To maximize resources, the original round table were split into six different groups according to the six categories in the Programme: competitiveness, demand and investments activation, urban and buildings rehabilitation, innovation and technological development, legislation development against speculation and employment.

The tasks followed the following schedule:

- February 2014: Beginning of the preparatory tasks for the implementation of the Programme.
- March 2014: the Andalusian Regional Government publishes the Decree-law 1/2014, which regulates the Programme for the Promotion of Sustainable Construction in Andalusia.
- April 2014: first call for incentive schemes launched.
- July 2014: Sustainable Construction Round Table constituted.
- September 2014: first call for incentive schemes closes.
- January 2015: the Development Plan of Sustainable Construction is approved, elaborated in the framework of the the Sustainable Construction Round Table, with a **very high consensus** of all the participating experts.
- February 2015: the Plan gets public and submitted to public scrutiny.
- February 2015: second call for incentives launched with new funds (€74 million) as well as the financing line based on revolving funds.

Performance indicators linked to the practice

Data come from the general performance of the Incentives Programme for Sustainable Construction in Andalusia.

- Number of households engaged in support programmes: 60.000. Benefited groups included 60.000 citizens, 600 neighbourhood communities and 2.500 companies, many of them SMEs.
- (kWh) Annual energy savings in households: **422 million kWh/year** (26.000 toe) primary energy saved or diversified through low-carbon energy sources.
- (%) Reduction of the use of fossil fuels in the building sector. No data available at the moment.

Indicators of success linked to the practice:

Since the Sustainable Construction Programme, in Andalusia (PICSA) count on a 2020 horizon the success is yet to come.

The creation of the Sustainable Construction Roundtable involving more than 70 experts from different disciplines as a part of the Sustainable Construction Programme in Andalusia, was given reconnaissance with the **REGIOSTARS 2015 award** in the Category 2: Sustainable Growth. Link to the [news](#):

http://ec.europa.eu/regional_policy/en/newsroom/news/2015/10/regiostars-awards-2015-honours-europe-s-most-innovative-regional-projects

Evidence of success.

The evidence of success comes from the fact that the Plan was approved with a massive support and full consensus from all the involved stakeholders.

The public authorities get benefited from this open participatory process and assure the plan has solid bases in accordance to the citizens and stakeholders opinions. The plan has been written in a democratically opened way, empowering the stakeholders and getting benefits of an open decision-making process.

Factors that might hamper the transfer: Please indicate problems or barriers that could appear

GOOD PRACTICE FICHE		Region: Andalusia
when transferring the good practice to other partner.		
Time required to complete the BP	1 year	
Contact details to obtain further information on the practice		
Contact name	Joaquín Villar	
e-mail	joaquin.villar@juntadeandalucia.es	
Organization	Andalusian Energy Agency	
Type of Organisation	Regional public government energy agency	
Website	www.agenciaandaluzadelaenergia.es/know-the-agency	

GOOD PRACTICE FICHE		Region: Andalusia
Title of the good practice:	A9. Energy efficiency refurbishment in public social housing in Andalusia	
Partner region:	Andalusia	
Location data	Andalusia	
Topic of the practice: Thematic coverage <ul style="list-style-type: none"> o Activation of demand and combating energy poverty o Professionalization of the construction sector 		

Description of the practice:

The Andalusian Agency for Homes and Rehabilitation began in 2013 a new Energy Rehabilitation Programme of its social housing building stock (property of the public administration) due to policy and legal changes. Apart from the renovation works themselves, personnel training was needed as well as required changes on some organization processes.

The Agency acts fostering socio-economic activity by enabling the capacity building and employment of those population collectives with hard access to the labour market as well as enabling the social function of homes and showing itself as example and case study of energy rehabilitation for public bodies.

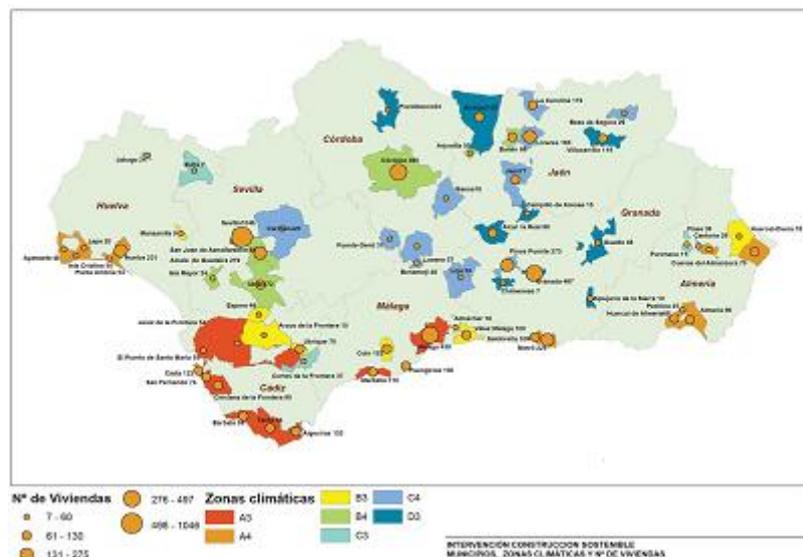
Kind of the practice: Gradual rehabilitation and energy retrofitting of the public homes stock (social housing).

Objective. Increase of indoor homes comfort and air quality, improvement of habitability, energy saving and reduction of GEI (CO₂) emissions in social housing homes.

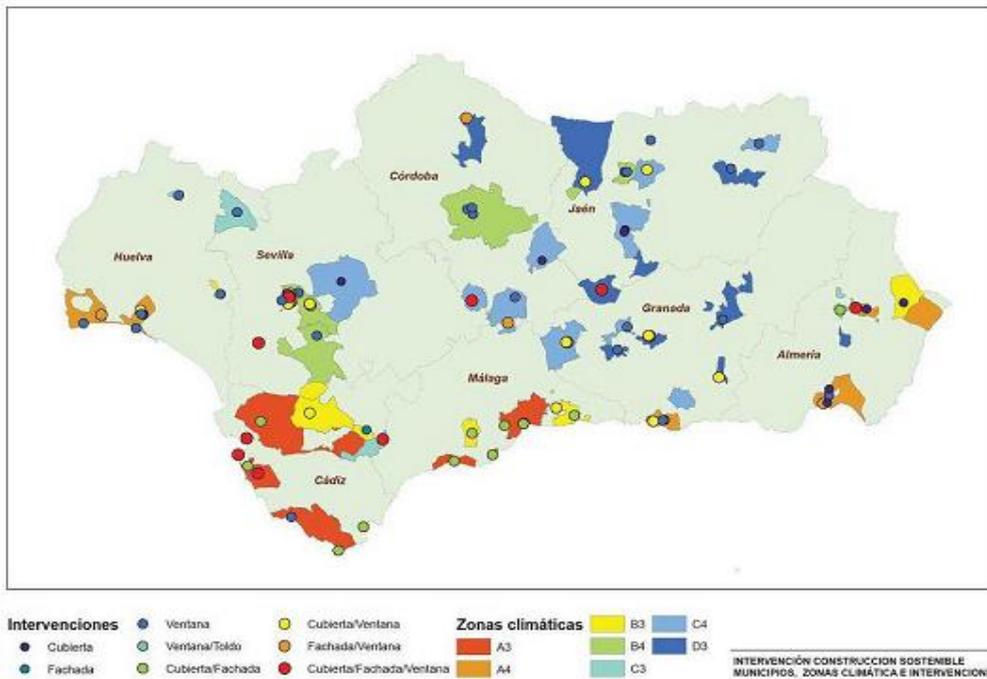
Challenge addressed:

2014-2015:

2014-2015 period, and under Sustainable Construction Programme (co-financed by FEDER) managed by the Andalusian Energy Agency (AEA), 111 buildings, summing up to 6.794 homes, were rehabilitated, renovated or retrofitted on the 8 Andalusian provinces, 65 municipalities and 7 different climatic zones.

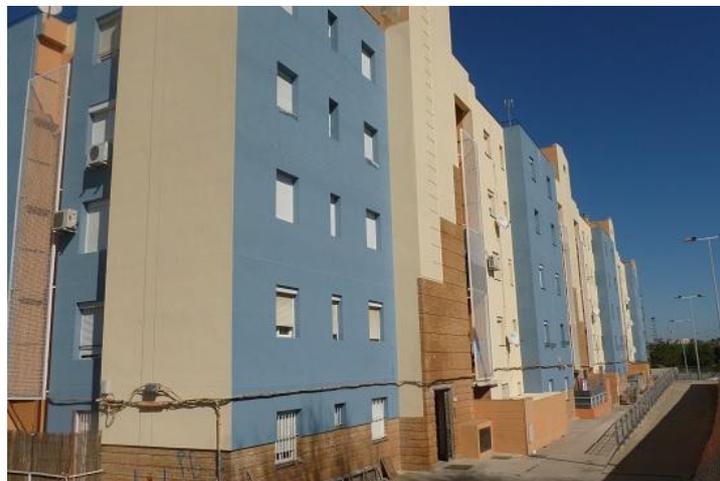


These works made able meeting the European Directive targets and, when possible, overcome these limits to fall into “high energy efficiency standards” were focused mainly on the building envelope, e.g.,s façades, windows and roofs.



2016-2017:

During 2016-2017 period, 488 homes in 5 buildings were rehabilitated or retrofitted, co-financed by FEDER, National funding and regional budget. These works were more complete than those performed in the last period and some innovative elements were included, as isolation eco-materials, solar thermal, ventilated façades and high efficiency hot water equipment.



100 already renovated homes in Puerto Real, Cádiz.

2017-2019:

24 buildings covering 521 homes in Granada, Jaén and Córdoba is the target for the 2017-2019 period. Among them, 386 homes rehabilitation works will be covered by the Sustainable Construction Incentives Programme, managed by AEA and co-funded by FEDER

GOOD PRACTICE FICHE

Region: Andalusia



Target homes at Córdoba



Target homes at Málaga



Target homes at Jaén

Together with the technical renovation works themselves, AVRA conducted some other complementary initiatives to round the programme, as:

- Internal management of projects design, rehabilitation works and health and safety coordination, for what concerned personnel needed to be trained for the corresponding tasks.

GOOD PRACTICE FICHE

Region: Andalusia

- Diagnosis (before), surveillance (during) and check (after) of energy efficiency-related renovation works (blower door, thermographies, etc.) with the support of some university research teams.
- Measures to increase employability of concerned independent professionals and workers formerly unemployed.
- Dissemination and raising awareness activities among the neighbourhood.

A major challenge was performing the needed works while the tenants lived daily in the buildings

Main stakeholders involved and beneficiaries target groups.

There were three main involved target groups: tenants (families), the professionals and companies working for every stage of the programme, and the promoter itself –AVRA.

The families are rewarded after a tiring works period due to the increased comfort at home, lesser energy consumption needs and improved durability and maintenance conditions of the buildings.

The professionals (building-related workers, university researchers, independent professionals and construction companies) apart from the economic activity itself, have access to innovative techniques on building rehabilitation and renovation. AVRA’s personnel get and researchers got trained on-site on real works. Concerning formerly unemployed independent professionals and workers, had access to measures fostered by AVRA to increase their employability and training on energy rehabilitation. Companies, on the other hand, got an useful experience to increase their competitiveness regarding energy rehabilitation.

AVRA, finally, gets benefitted for an increased quality and conditions of their social residential buildings through innovative measures. Also, AVRA is benefitted for a better qualification and education of the workers and the internalised processes through this experience.

Financial resources required for its implementation

Most of the works were granted with the Sustainable Construction Programme (co-financed by FEDER) managed by the Andalusian Energy Agency (AEA), and also co-financed with own funds.

Strengths

- The involved professionals had access to innovative techniques on building rehabilitation and renovation while companies got useful experience to increase their competitiveness regarding energy rehabilitation, what fostered the reinforce of a energy rehabilitation market.
- The exemplary work by the public administration served as a spark to ignite the rehabilitation private market

Weaknesses

- Excessive subsidies dependency for rented homes. The landlord that rent a home has no way to obtain profits from this kind of investments since the benefitted persons are the tenants.

Areas of improvement and lessons learned

We learnt how to implement the needed measures in a more efficient way and optimizing resources. Also, we got experience on technical issues as isolation.

Moreover, raising awareness among tenants was very important to avoid discomfort.

Monitorization tasks in collaboration with the University of Seville has been very rewarding since it delivered a lot of useful data that helped AVRA how to optimize future renovation works.

Performance indicators linked to the practice

- **Number of households with improved energy labelling:** 6.794 until 2015. 2016-2017: 488. 2017-2018 (exp.) 889.
- **Number of households with improved energy consumption classification.** 6.794 until 2015. 2016-2017: 488. 2017-2018 (exp.) 889.

GOOD PRACTICE FICHE		Region: Andalusia
<ul style="list-style-type: none"> • Number of households engaged in support programmes. <u>6.794</u> until 2015. 2016-2017: 488. 2017-2018 (exp.) 889. • (%) Reduction of annual primary energy consumption in public buildings: N/A. It has been estimated a reduction in final energy consumption of 16-22% just avoiding the major leakage problems. A • (kWh) Annual energy savings in households: N/A. • (%) Reduction of the use of fossil fuels in the building sector: N/A. Estimation of 3.100 ton CO₂ /year reduction 		
Indicators of success linked to the practice:		
<ul style="list-style-type: none"> • During 2014-2015, 140 homes were monitorised. • Thermal comfort total time: 90% (under pilot project monitorisation in Cádiz). • Thermal discomfort time reduces by 72% (under pilot project monitorisation in Granada). 		
Evidence of success.		
<p>These works are putting all these families out of a former energy poverty situation. In addition, raising awareness and dissemination measures among the neighbourhood acts not only as an education tool but also a social glue and empowers directly their beneficiaries in the transformation of the buildings and urban landscape.</p> <p>Monitorisation of the buildings and explanations of the registered data let the beneficiaries interpret the change and enabled a change of habits regarding energy consumption and raising awareness on the importance of energy saving, directly billed on economic saving and CO₂ emissions reduction.</p>		
Factors that might hamper the transfer:		
<ul style="list-style-type: none"> • A lack of funding since the financial return of these kind of measures is very low. • Raising awareness among the neighbourhood and dissemination activities. • Low qualification of professionals that disable the correct execution of the planned measures. • Some programme requirements impose the installation of active equipment (heat and cold generation) to get a very high energy performance. Some of this equipment could not be maintained, managed or used by the final beneficiaries. 		
Time required to complete the BP	See dates above	
Contact details to obtain further information on the practice		
Contact name	Marta Romero García/Elena Morón Serna	
e-mail	marta.romero@juntadeandalucia.es elena.moron@juntadeandalucia.es	
Organization	AGENCIA DE VIVIENDA Y REHABILITACIÓN DE ANDALUCIA (Andalusian Agency for Homes and Rehabilitation) - AVRA	
Type of Organisation	Regional public agency, government Andalusia	
Website	www.juntadeandalucia.es/avra https://www.bing.com/search?q=agencia+de+vivienda+y+rehabilitaci%C3%B3n+de+andalucia&src=IE-SearchBox&FORM=IENTTR&conversationid=	
Fiche completed on date:	19/09/2017	

GOOD PRACTICE FICHE		Region: Lithuania
Title of the good practice:	L2. Technical Support and Promotion in Multi-Apartment Building Modernization (BETA Agency)	
Partner region:	Lithuania	
Location data	Lithuania	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> ○ Activation of demand and combating energy poverty ○ Professionalization of the construction sector 		
Description of the practice:		
<ul style="list-style-type: none"> ▪ At the introduction of the multi-apartment modernization program, just few building applied for the modernization loans. MABR was struggling, because: <ul style="list-style-type: none"> - public relations program failed (final beneficiaries were not aware of the program); - multi apartment owners were poorly organized; - financial intermediaries did not wanted to take on an extra administrative work (e.g. technical evaluation, reporting, creating new accounting systems and etc.); ▪ As a response to these issues state established agency (BETA) responsible for: <ul style="list-style-type: none"> - providing support with project/program preparation and implementation; - MABR program coordination and assistance to municipalities administrators; - evaluation of the project documentation; - supervision of project implementation; - monitoring; - administration of the State subsidy provided to the project implementers; - organizing capacity building programs, trainings and public information activities. 		
Description of the technical assistance institution – BETA		
<p>Public Company Housing Advisory Agency was established on 2001. After the reorganization the public company it was renamed Housing Energy Efficiency Agency (BETA), which established on February 19, 2013. BETA provides consulting services and assistance for homeowners on matters related to the renovation (modernization) of multi-apartment buildings. It also evaluates and approves submitted investment plans and procurement documents, cooperates with municipal authorities, engineering consultancy companies, educational institutions, non-governmental organizations, etc. BETA also implements the project which purpose is to encourage the owners of the apartments and other premises in multi-apartment buildings to participate in the Multi-apartment Building Renovation (Modernization) Programme.</p> <p>Moreover, BETA participates in EU-funded international projects, which in turn strengthens cooperation with housing partners from other countries, and enhances skills and experience in developing projects related to the application of alternative energy resources in multi-apartment buildings, and in generating ideas for the construction of passive houses. It also performs activities related to encouraging homeowners to renovate multi-apartment buildings.</p> <p>In the near future the Agency is planning to coordinate the Programme for Energy Efficiency Improvements in Public Municipality Buildings.</p>		
Performance indicators linked to the practice		
Performance indicators:		
<ul style="list-style-type: none"> • Estimated number of households with improved energy labelling - >37 thousand; • Estimated number of households with improved energy consumption classification - >37 thousand; • Estimated number of households engaged in support programmes - ~120 thousand; 		

GOOD PRACTICE FICHE		Region: Lithuania
<ul style="list-style-type: none"> Estimated annual energy savings in all households (kWh) - ~272 million <p><u>Indicators above are related to other practices as well, specific allocation to this GP is not possible.</u></p>		
<p>Indicators of success linked to the practice:</p> <ul style="list-style-type: none"> investment projects for the renovation evaluated – 3659; around 400 million EUR investments materialized in multi apartment buildings in Lithuania (ESI, commercial banks, state budget); Promotional activities implemented ~400; increase in awareness among individuals increased from 58,6 % (in 2014) to 92,9 % (in 2015) <p><u>Indicators above are related to other practices as well, specific allocation to this GP is not possible.</u></p>		
<p>Evidence of success.</p> <p>Introduced measures resulted in major increase in project pipeline. The GP helped to shape FI's in a way so they become attractive to final beneficiaries.</p> <p>Technical support measures helped to increase quality of applications, technical documentation and quality of construction works.</p>		
<p>Factors that might hamper the transfer: Please indicate problems or barriers that could appear when transferring the good practice to other partner.</p> <p>Major challenges:</p> <ul style="list-style-type: none"> to find resources to be allocated for the technical support (including funds to be allocated to local technical support agency); increase in number of employees working on the renovation (although this can be tackled by delegating some activities to existing entity) 		
Time required to complete the BP	1-2 years	
Contact details to obtain further information on the practice		
Contact name	Justinas Bučys	
e-mail	justinas.bucys@vipa.lt	
Organization	Public Investment Development Agency	
Type of Organisation	Joint stock venture (publicly owned)	
Website	www.vipa.lt	

GOOD PRACTICE FICHE		Region: Lithuania
Title of the good practice:	L3. Quality in Multi-Apartment Building Modernization	
Partner region:	Lithuania	
Location data	Lithuania	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector • New financial instruments 		
Description of the practice:		
<p>Quality of works regarding buildings modernization is one of the main issues to be tackled, because investments for the modernization are relatively high. Bad examples are usually more visible, save less energy, create important concerns among the citizens and are escalated in the media.</p> <p>While promoting financial instruments, extremely huge attention was contributed to ensure the quality of construction works, so the following measures where implemented:</p> <ul style="list-style-type: none"> ▪ technical projects are checked and approved by municipalities specialists. ▪ construction companies are required to provide insurance, that they can perform works in accordance to the contract. ▪ construction companies are pre-checked before public procurement process (companies are checked for their capacity, excluded companies in black list). ▪ construction works are supervised by independent and certified specialists. ▪ effective complaint system is developed in order to timely react to any resident complaint. ▪ BETA (technical support agency) performs on-site visits to check all requirements are met. ▪ state territorial planning and construction inspectorate (local construction supervisory authority) has to visit each construction site at least 2 times- ▪ good examples of implemented projects are promoted in the media. 		
Performance indicators linked to the practice		
<ul style="list-style-type: none"> • Estimated number of households with improved energy labelling: 37.000 • Estimated number of households with improved energy consumption classification: 37.000 • Estimated number of households engaged in support programmes: 120.000 • Estimated annual energy savings in all households (kWh): 272 million <p><u>Indicators above are related to other practices as well, specific allocation to this GP is not possible.</u></p>		
Indicators of success linked to the practice:		
<ul style="list-style-type: none"> ▪ increase in value of renovated buildings 15-20%. ▪ all renovated buildings reached at least 40% savings and energy efficiency labeling C <p><u>Indicators above are related to other practices as well, specific allocation to this GP is not possible.</u></p>		
Evidence of success.		

GOOD PRACTICE FICHE		Region: Lithuania
<p>Introduced measures resulted in major increase in project pipeline. The GP helped to shape financial instruments in a way so they become attractive to final beneficiaries.</p> <p>Supervision measures helped to increase quality of construction works and satisfaction among final beneficiaries.</p>		
<p>Factors that might hamper the transfer:</p> <ul style="list-style-type: none"> • partners may need to adjust various legislation acts to implement provided measures. • measures may vary depending on the region weather conditions. 		
Time required to complete the BP	2-3 years. Although when measures are known, it can take much faster	
Contact details to obtain further information on the practice		
Contact name	Justinas Bučys	
e-mail	justinas.bucys@vipa.lt	
Organization	Public Investment Development Agency	
Type of Organisation	Joint stock venture (publicly owned)	
Website	www.vipa.lt	

GOOD PRACTICE FICHE		Region: Lithuania
Title of the good practice:	L5. Standardization and Simplification in Multi-Apartment Building Modernization	
Partner region:	Lithuania	
Location data	Lithuania	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> ○ Activation of demand and combating energy poverty ○ Professionalization of the construction sector 		
Description of the practice:		
<p>When planning the MABR modernization programme, one of the immediate challenges was to standardize and simplify the documents and whole processes to enable a smooth and understandable implementation of financial instruments.</p> <p>The Lithuanian government decided to simplify the process for final beneficiaries by imposing some legal changes:</p> <ul style="list-style-type: none"> • 50% +1 of apartment owners (absolute majority) needed to agree to join the program. • joint liability for the building modernization investments. <p>Other financial institutions introduced process simplification measures:</p> <ul style="list-style-type: none"> • Central public procurement organization introduced simplified and shorter procedures for building modernization procurement. • BETA Agency [see GP titled “Technical Support and Promotion in Multi-Apartment Building Modernization (BETA Agency)”] created simplified application forms and reduced administration extent to minimum necessary. • Special standardized templates prepared for public procurement, including standardized construction agreement. • Improved and standardized documents for energy efficiency certification were prepared. 		
Performance indicators linked to the practice		
<ul style="list-style-type: none"> • Estimated number of households with improved energy labeling: 37.000 • Estimated number of households with improved energy consumption classification: 37.000 • Estimated number of households engaged in support programmes: 120.000 • Estimated annual energy savings in all households (kWh): 272.000 <p>Indicators above are related to other practices as well, specific allocation to this GP is not possible.</p>		
Indicators of success linked to the practice:		
<ul style="list-style-type: none"> • estimated total energy savings (kWh) – ~500.000 kWh up to the date. • reduction of (ton CO₂ equivalent) emissions – ~116.000. • buildings affected: <ul style="list-style-type: none"> ▪ buildings renovated (as of 9 September 2016) – 848 ▪ estimated surface (m²) affected - ~ 1.5 million ▪ buildings under renovation – 649 ▪ Investment projects evaluated (waiting list) – 1.411 ▪ circa €400 million investment materialized in multi-apartment buildings in Lithuania (ESI, 		

GOOD PRACTICE FICHE		Region: Lithuania
commercial banks, state budget);		
Indicators above are related to other practices as well, specific allocation to this GP is not possible.		
Evidence of success.		
Introduced measures helped to decrease administration workload, legal uncertainty and trust in the program (financial intermediaries and investors now trust in the program and are willing to participate with own funds).		
Factors that might hamper the transfer:		
<ul style="list-style-type: none"> ▪ detailed local legislation analysis needed; ▪ high competencies of experts involved in standardization and simplification required; ▪ some measures may require to have more complex legal framework changes; ▪ market requirements must be considered and market should players consulted (responses should be treated cautiously) 		
Time required to complete the BP	2-3 years. We believe, that it should take much shorter to introduce applied measures in other partners countries	
Contact details to obtain further information on the practice		
Contact name	Justinas Bučys	
e-mail	justinas.bucys@vipa.lt	
Organization	Public Investment Development Agency	
Type of Organisation	Joint stock venture (publicly owned)	
Website	www.vipa.lt	

GOOD PRACTICE FICHE		Region: Lithuania
Title of the good practice:	L6. Standardization and Simplification in Public Buildings Modernization	
Partner region:	Lithuania	
Location data	Lithuania	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> ○ Activation of demand and combating energy poverty ○ Professionalization of the construction sector ○ New financial instruments 		
Description of the practice:		
<p>Lithuania has done much in recent years to reduce its energy intensity. However a market segment with considerable energy efficiency potential is the building sector. This includes public sector buildings such as schools, town halls, hospitals (and street lighting). Underinvestment and inefficient operations in these assets waste energy resources and create a significant burden on the public budgets and inadequate comfortable levels for its users, including civil servants, students, patients and normal citizens in poorly lit streets.</p> <p>Estimated potential energy savings range from 25% with few investments to as much as 60% provided there is a high standard of design and investments. It is well understood that many energy saving investments can be repaid through the savings on future energy bills, which means the net effect on the budget can be neutral, and once the investments have been repaid, strongly positive. Commercial arrangements to achieve this can be designed using energy performance contracting (EnPC). In EnPC energy efficiency works (capex) and services are paid mostly from resulting energy cost savings (i.e. budget neutral and not counted as public debt), while ESCOs may sell the resulting receivables (forfeiting) in order to refinance themselves.</p> <p>However these approaches have not yet been well developed in Lithuania. There are a number of existing barriers that explain this:</p> <ol style="list-style-type: none"> 1. Lack of internal funding of beneficiaries and lack of adequate long term financing product for external financing through ESCOs <ol style="list-style-type: none"> a. Public and private building owners lack own funds for financing energy efficiency investments. b. Lack of an appropriate long term financing product for externally financing the energy efficiency investments through ESCOs. 2. Regulatory uncertainties <ol style="list-style-type: none"> a. The contractual and regulatory framework in Lithuania could needed to be still further clarified and simplified. b. A business model is only starting to be established. 3. Lack of resources amongst stakeholders <ol style="list-style-type: none"> a. Lack of expertise and resources among the building owners for preparing ESCO tenders, evaluating bids and monitoring performance. <p>VIPA Agency signed an ELENA (technical assistance facility managed by EBRD) agreement to create project pipeline and to involve a certain number of stakeholders (Lithuanian ESCOs, public authorities and building owners participating in actual EnPC activities) big enough that they can then build on this experience and replicate the ESCO concept further. Transparent and secure framework</p>		

GOOD PRACTICE FICHE

Region: Lithuania

conditions and sufficient demand of ESCO projects would allow a national ESCO industry to develop.

Because of the legal restrictions in Lithuania, most central government buildings users are not able to borrow capital on their behalf. In order to address this issue it was decided to apply the ESCO model and start to develop ESCO market in Lithuania. It was soon realized that it was needed standardized documentation for the Public buildings program:

- standard ESCO procurement documentation.
- standard ESCO agreement.

The ESCO procurement is considered public-private partnership (PPP) type procurement in Lithuania. PPP project cycle was, accordingly, standardized, simplified and made shorter.

Performance indicators linked to the practice

Indicators of success linked to the practice:

Other indicators of success:

- 39 applications received to finance trough ESCO.
- 13 ESCO type financing application approved.

Evidence of success.

High interest and involvement of possible ESCO's and public building owners are shaping project pipeline. Simplified process will help to reduce administration burden.

Factors that might hamper the transfer:

Major challenges:

- detailed local legislation analysis needed.
- some measures may require to have more complex legal framework changes.
- high competencies of experts involved in standardization and simplification is required.
- market requirements must be considered and market should players consulted (responses should be treated in unbiased way).

Time required to complete the BP	1 year
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Contact details to obtain further information on the practice

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Organization	Public Investment Development Agency
Type of Organisation	Joint stock venture (publicly owned)
Website	www.vipa.lt

GOOD PRACTICE FICHE		Region: Lithuania
Title of the good practice:	L7. Complex projects	
Partner region:	Lithuania	
Location data	Lithuania	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector • New financial instruments 		
<p>During multi-apartment building modernization project implementation, new tendencies emerged:</p> <ul style="list-style-type: none"> • broader planning required due to behavior changes (e.g. some blocks required less energy, therefore smaller diameter heating pipes and smaller heat producing plants needed). • building owners willing to improve their neighborhood. 		
Detailed background		
<p>The Lithuanian Government has made the energy-efficient refurbishment of existing real estate one of their top priorities. In the new financial period of 2014-2020, the plans include renovations on entire city blocks at once, moving towards a more holistic practice of the integrating renovation of the entire block, rather than simple one-off projects. It means that not only would a single apartment building be affected, but that care would be given to the entire infrastructure in the immediate area, including street lighting, parking-lots, green spaces, playgrounds etc.</p> <p>At the end of 2014, the Ministry of Environment of the Republic of Lithuania and the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety signed a co-operation agreement, supporting Lithuania in developing and implementing the first pilot project of the block renovation initiative in three Lithuanian cities. In the first phase of the integrated block renovation implementation plan for three Lithuanian pilot cities was envisaged.</p> <p>Lithuania has been successfully engaged in modernizing multi-dwelling apartment buildings since 2013, after a new renovation model was introduced. But the overarching goal is to regenerate entire city blocks, rather than single buildings. Modernizing the existing infrastructure as a whole makes the city areas more attractive places to live overall. Therefore, within this pilot project, a complex renovation of the selected quarters in three different cities of Lithuania will be both a learning experience and an adaptable example for other Lithuanian municipalities. Close partnership between the Ministry of the Environment of the Republic of Lithuania and the Association of Local Authorities in Lithuania, throughout all stages of implementation of the pilot project, in later stages will help spread the good practice of block renovation across other Lithuanian municipalities. The aim is to encourage municipalities to include the renovation of residential and public buildings, as well as the regeneration of the surrounding environment and supporting infrastructure, a central facet of their on-going territorial development and improvements programs.</p> <p>Lithuania is looking for opportunities to achieve maximum cost-efficiency when it comes to investing in integrated regeneration projects for its cities, benefiting from the experience of other country's similar renovation projects (such as German experience).</p>		
Performance indicators linked to the practice		
<ul style="list-style-type: none"> • Estimated number of households with improved energy labeling: 37.000 • Estimated number of households with improved energy consumption classification: 37.000 		

- Estimated number of households engaged in support programmes: 120.000
- Estimated annual energy savings in all households (kWh): 272.000

Indicators above are related to other practices as well, specific allocation to this GP is not possible.

Indicators of success linked to the practice:

- new building block renovation program prepared and launched;
- 3 pilot project applications for block renovation received and financing plans prepared.

Indicators above are related to other practices as well, specific allocation to this GP is not possible.

Evidence of success.

The multi-apartment building renovation process fostered interest in complex buildings blocks (quarter) renovation program which envisage complex renovation of city areas. New programme is developed and 3 pilot projects are launched. Currently, potential financing sources to fund such programme are under analysis.

High interest of municipalities is expressed with possible project pipeline development is envisaged.

Factors that might hamper the transfer:

- coordination of the different financing sources for the complex renovation is challenging.
- Need to find financing sources for non-profit generating investments (e.g. recreational and green areas).

Time required to complete the BP

1 year

Contact details to obtain further information on the practice

Contact name Justinas Bučys

e-mail justinas.bucys@vipa.lt

Organization Public Investment Development Agency

Type of Organisation Joint stock venture (publicly owned)

Website www.vipa.lt

GOOD PRACTICE FICHE		Region: Gloucestershire, UK	
Title of the good practice:	G3.ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis		
Partner region:	Participant Name	Country	
	Liaison Committee for Sustainable Energy	France	
	(GERES) Groupe Energies Renouvelables, Environment et Solidarites	France	
	Severn Wye Energy Agency, Gloucesterhire	UK	
	Caritasverband (CARITAS) Frankfurt, Germany	Germany	
	Focus Association for Sustainable Development	Slovenia	
	Energy Agency of Plovdiv (EAP) Bulgaria	Bulgaria	
	Institute de l'Ecologie en Milieu Urbain (IDEMU)	France	
Location data	Wiltshire, UK		
Topic of the practice: Thematic coverage			
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector 			
Description of the practice:			
<p>A number of training and work experience placements were offered to job-seekers through the local Job Centre. A guaranteed interview was then offer at the end of the work experience placement. The training was aimed at people who had no previous experience in working in the energy sector or in energy advice.</p> <p>Home visits were offered to vulnerable clients in the Trowbridge area of Wiltshire; these were carried out by the new trained energy advisors. Each client received two visits which produce a broad range of recommendations for clients, with the aim of saving households an average of 10%.</p> <p>Visit 1: Assessed in detail the clients energy and water consumption in the home and will lasted around 2 hours.</p> <p>Visit 2: The advisor then visited a second time to give the client a written report showing where and how the client could reduce their energy use. The advisor explained the information in the report, and answered any questions the clients had. The advisor also fitted free energy saving devices where appropriate and giving them tips on small changes in behaviour that will help to save even more money.</p>			
Complementary benefits			
<ul style="list-style-type: none"> ○ Training and development of new energy advisors ○ Job creation for people out of work 			
Performance indicators linked to the practice			
<ul style="list-style-type: none"> • Number of households with improved energy consumption classification • Number of households engaged in support programmes: 136 • (kWh) Annual energy savings in households • Training and development of new energy advisors: 9 • Job creation for people out of work: 9 			

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
<p>Indicators of success linked to the practice:</p> <ul style="list-style-type: none"> o 136 home visits were carried out. From these a total of £6062.81 per year was saved from customers' bills, averaging £44.58 per household/year. This equates to 19374.93 kg of CO₂ saved per year, averaging 142.46 kg of CO₂ per household. o Nine advisors were recruited and trained during the project. 		
<p>Evidence of success.</p> <p>Across the 136 properties, 1319 energy saving devices were installed; this included 572 energy saving bulbs (82 LEDs), 372 reflective radiator panels and 272 TV power downs. In addition, as a result of referrals made through the scheme, further energy efficiency measures were installed (boiler upgrades, loft and cavity wall insulation) that are estimated to save a further £855 and 3640kg of CO₂ per year.</p> <p>Customer satisfaction with the service was high (the average was 8.9, where 10 was very satisfied). 95% found the energy saving tips and recommendation provided helpful (30%) or very helpful (65%). 95% also said they found the energy saving devices installed on the return visit helpful (21%) or very helpful (74%).</p> <p>Nine advisors were recruited over the period of the project on either a fixed term contract or a zero hours contract. Recruitment was targeted at people who had been out of work. The targeted individuals were offered a training course, work experience and a guaranteed interview. The training was aimed at people who had no previous experience in working in the energy sector or in energy advice. All advisors reported that they liked the job, one commenting that they 'get a great deal of job satisfaction'.</p>		
<p>Factors that might hamper the transfer:</p> <p>Newly trained energy advisors required a lot of support from supervisors; this should be allowed for in time allocations.</p> <p>Generating interest in visits can take a significant amount of time. It would therefore be beneficial to conduct the project in an area where existing relationships with potential clients and stakeholders are held. It is important to consider whether the newly trained advisors can drive/have access to a car or use reliable and accessible public transport.</p> <p>Consider the ability of the recruits and their confidence to do the job. It is important to provide day to day mentoring and support.</p>		
Time required to complete the BP	36 months	
Contact details to obtain further information on the practice		
Contact name	Sarah Dittmann	
e-mail	sarahd@severnwye.org.uk	
Organisation	Severn Wye Energy Agency	
Type of Organisation	Private SME and not for profit sustainable energy education charity	
Website	www.severnwye.org.uk	

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
Title of the good practice:	G5. Target 2050	
Partner region:	Gloucestershire, UK	
Location data	Stroud Local Authority area, UK	
Topic of the practice: Thematic coverage <ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector • Innovation • New financial instruments 		
Description of the practice: <p>What was the reason for commissioning the project?</p> <p>Stroud District Council were aware that there was a need to increase the rate of retrofit in their properties in order to meet the 2050 carbon reduction targets. As many buildings in the district are old and there is wide range of property types, many existing households did not fit the standard retrofit options available so uptake of incentives was not as high as it could be. This also applied to businesses and community buildings which were facing financial pressures and were important hubs for the community both socially and economically. As a result, Stroud District Council commissioned Severn Wye Energy Agency to complete the Target 2050 project. The name was inspired by the headline National target for a 60% reduction in carbon dioxide emissions on 1990 levels by 2050.</p> <p>What is Target 2050?</p> <p>A programme of local activity which was developed to complement what was provided through the market and/or national programmes. This consisted broadly of:</p> <p>Target 2050 Homes: Development of a targeted approach to achieving deep carbon cuts in existing homes.</p> <p>Target 2050 Business: Bespoke advice for SMEs, with on-site surveys and action plans. This was designed to complement the Carbon Trust provision by targeting those whose annual energy spend was below their threshold for face-to-face support.</p> <p>Target 2050 Community Buildings: On site surveys, advice and help with finance for measures to improve energy efficiency and promote renewables in community buildings.</p> <p>The programme also incorporated completion of the Eco-Management Scheme (EMAS) for the local authority's own operations and support for development of forward-looking planning policy through mapping of heat loads and resources for renewable energy against housing needs.</p> <p>How did Target 2050 Homes work?</p> <p>The project aims were:</p> <ul style="list-style-type: none"> ○ Providing an effective framework for significantly reducing carbon emissions for the domestic sector ○ Providing a significant range of examples of how existing technologies might be used to achieve deep carbon cuts in existing homes, while preserving built heritage and character ○ Stimulating the local market for sustainable energy retrofit ○ Alleviate fuel poverty by 'future-proofing' local homes ○ Enabling local suppliers to participate in this area of economic activity <p>The main features of the programme were the development and delivery of:</p> <ol style="list-style-type: none"> 1. An <i>expert advice programme</i> to support whole house sustainable energy retrofit. This included a home survey, a report and follow-on support. 2. Ongoing support for an <i>installer network</i> covering a range of relevant technologies with an inclusive, capacity building ethos. Installers were provided with support, networking events and 		

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Region: Gloucestershire, UK

advice through events, meetings and newsletters. All installers had to be accredited to named organisations and were able to explain the financial support mechanisms in place as part of their work, increasing the benefits for both consumer and installer.

3. A *set of case study homes*, broadly representative of the range of building types in the area, to illustrate the barriers and solutions to achieve deep carbon cuts through sustainable energy retrofit. 23 from 200 homes were selected based on a clear set of criteria. Each home had a full energy survey, an action plan, support to install as many measures as possible during the project including applications for grants where applicable. Up to £6000 additional support towards the cost of measures from a dedicated fund was also available. Low income households were able to apply to another allocated local authority fund to largely, or completely, cover the cost of installations.

The participating households Monitored their energy use and provided meter readings to the project team. They also took part in a behavioural change programme and had regular contact with the project team and each other through meetings, events and a website.

A further 37 exemplar homes have been developed through the extension of the Stroud Target 2050 approach into neighbouring areas.

4. An *effective communications programme* to make knowledge and experience available throughout the community. The behavioural change programme aimed to complement the core advice service through:

Feedback: Enabling and encouraging households to monitor energy use, to see what they have (or have not) achieved and take further action. Participating households were asked to log energy use on a monthly basis and this was fed back to them annually. More immediate feedback was to be provided through a locally-developed energy monitoring system known as “EMU” (Energy Monitoring Utility).

Peer group support: Motivating households to maintain energy saving behaviour through interaction with the other households in the group, developing a sense of being part of a club, and physically enabled via the project website, newsletters, social gatherings and events.

Sense of agency: A term sometimes used with regard to pro-environmental behaviour, in that if people feel empowered that they CAN make a difference if they make certain decisions, then they are more likely to do so.

5. A *pilot PAYS (Pays As You Save) loans programme*, to test consumer interest in this approach and learn practical lessons about delivery. During the final year of the programme the opportunity arose to join the Department of Energy and Climate Change Pay As You Save (PAYS) pilot, and Stroud District was one of just five pilots selected. It was relatively straightforward to apply the approach to the Target 2050 programme, as the appropriate partnership was already in place, together with a relevant advice approach with the requisite quantification of potential savings, and an installer group covering the necessary technologies. The District Council Environmental Health team adapted their grants and loans programme to meet the needs of a long-term loan repaid in monthly instalments, alongside the Council tax billing system, and put the necessary legal framework in place. A charge was registered against the property on the Land Registry to provide security for the loan in case of change of ownership. The PAYS loans programme was used in combination with bespoke advice about other grants and funding mechanisms available. This created a trusting relationship and avoided homeowners feeling overwhelmed.

How did Target 2050 Community Buildings work?

The project’s main focus was to ensure the uptake of energy efficiency and renewable energy measures in all participating community buildings, creating a number of ‘exemplar’ halls that demonstrate that an energy-efficient hall is a better asset to the community, a more viable business opportunity and can act as a catalyst for change across the community.

Support, advice and an on-site energy audit plus written report was offered to 30 Stroud District village halls and community buildings over the two years on a ‘first come, first served’ basis.

Severn Wye contacted all halls in the district in Year 1 and invited them to fill in a short application form. The first 10 eligible applications received were offered a full energy audit in Year 1 with remaining halls being put through to Year 2 when another recruitment campaign was carried out to fill the remaining places. All participating halls were required to provide Severn Wye with at least one

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year's worth of fuel bills prior to audit to help determine energy consumption patterns, check tariffs and any standing charges.

Once a building had been accepted onto the scheme, Severn Wye carried out an on-site energy audit accompanied by a relevant member of the committee and/or caretaker. The walk-round survey examined all elements of the building fabric and heating systems and involved discussion with the hall representative regarding building history, hall user type and frequency, any heating or lighting control systems, how they are used in practice and any plans for the future. Severn Wye then produced an energy audit report designed to provide a useful, accessible, comprehensible summary of the main features of the building in relation to energy use.

The report then moved on to a section that provided a summary of the recommended actions that could be taken.

Severn Wye advisors remained available to the halls for ongoing support with the implementation of the projects. This further support included help with applications for funding, obtaining permissions, identifying installers, assessing quotes, preparing business plans and consulting with local residents and community members.

To assist halls with the installation of identified measures and technologies, Stroud District Council offered participating halls a capital grant towards the realisation of the project.

In Year 1 Stroud District Council made £20,000 available through the Target 2050 programme and £55,000 through a regeneration programme. Halls were able to apply for up to £3,000 without match funding but for amounts above £3,000 and up to the maximum of £35,000, match funding of no less than 50% was required. All grants in Year 1 were administered by the Council.

In Year 2 the grant level was altered due to reduced funding available and halls were eligible for up to £3,000 (max. 75% of total project costs) from a total grant pot of £30,000. Severn Wye took over the administration of the grants in Year 2. The audit reports included full details of complementary funding sources, both local and national, to which halls could apply for matching funds.

Where required, direct follow-up assistance was given with applications to organisations including the Gloucestershire Environmental Trust (which awards grants from Landfill Communities Fund monies), and other government, private sector and charitable funds.

At the time of the project, there was significant public grant funding available for renewable energy installations, principally the Low Carbon Buildings programme. This has since ended and been replaced by the Feed-In Tariffs.

During the second year of Target 2050 Community Buildings, Severn Wye organised a number of energy days and events when the participating halls could come together to discuss the issues they were facing in implementing their sustainable energy projects and any lessons learnt. This was useful in encouraging halls to work together especially as many were facing very similar challenges.

How did Target 2050 Businesses work?

The project had four key elements:

1. To fill the gap in service provision. Only businesses with an annual energy spend of more than £50,000 were eligible for free, face to face, energy saving support at the time the project commenced.
2. The essence of the project was to work with local SMEs to identify opportunities for them to reduce their energy consumption/CO₂ emissions at the same time as reducing the rate at which their energy bills were increasing.
3. One very important aspect was to provide ongoing support up to the point at which measures were actually installed within businesses. To support this, a local sustainable energy installer network was established to deliver recommendations made in the energy reports.
4. The final element of work was to integrate this project with wider environmental support services available to businesses. By creating close working relationships with other service providers such as Business Link it was possible to achieve this.

The project proved very popular and successful. 120 Stroud-based businesses signed up to the scheme over four years with 93 receiving a full package of support.

GOOD PRACTICE FICHE

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The scope of this programme was developed from experience of two previous programmes: the Carbon Trust on-site support to larger businesses with an annual energy spend of more than £50,000, and the Carbon Trust/Energy Saving Trust partnership SME advice pilot, Action Energy , which ran from 2002 to 2004.

In both cases it was the business that was left to interpret the energy report, identify the specific energy saving measures (specific type of lighting, motor, pump or boiler) and then find a quality installer to undertake the work. As a result, many businesses did not get to the point of implementing the measures recommended, and energy and carbon saving potential was not realised.

The Target 2050 business service provided:

- free on-site energy surveys
- a tailored report of findings
- development of bespoke 'energy action plans' with each business
- follow up support to research specific technologies
- identification of qualified and accredited installers
- help with reviewing quotes for works being considered

Initially our service was aimed at those businesses with an energy spend of £5,000-£50,000. As the project progressed, this was broadened to be available to businesses with an energy spend of less than £5,000 at the request of the Federation of Small Businesses and other partners.

At first it was difficult to recruit businesses to the scheme with many companies appearing suspicious of an unknown agency approaching them. However, working with known and trusted organisations such as Business Link and the Council has greatly increased the number of companies joining the project.

The top five measures installed by Target 2050 businesses were:

1. Improved monitoring of energy use
2. Development of an energy policy
3. Installation of more efficient lighting
4. Increase in levels of draught proofing
5. Undertaking competitive tendering for utilities

Performance indicators linked to the practice

- Number of households with improved energy labelling
- Number of households with improved energy consumption classification
- **Number of households engaged in support programmes: 102 (see overleaf)**
- (%) Reduction of annual primary energy consumption in public buildings
- **(kWh) Annual energy savings in households: 70,290 kWh/year energy savings**
- Number of households with improved energy consumption classification

Indicators of success linked to the practice:

What were the key outcomes of the Target 2050 Homes project?

- The surveys indicate the potential to achieve an average annual reduction of 58% in CO2 emissions, 57% in energy consumption and £960 on fuel bills, by applying known and available measures
- **102 of the households surveyed are known to have gone on to install energy saving measures which could reduce their energy consumption and carbon emissions by an average of 24%, and their fuel bills by £406**
- Of the 50 case study homes, the ten with the greatest savings potential as a result of the measures already installed could achieve carbon savings of 41-74%, energy savings of 22%-70% and fuel bill savings ranging from £186 to £2,160
- The top ten homes all addressed heat loss in one form or another. Five of them switched their main heating fuel and a further four improved the efficiency of their heating by replacing their gas or LPG boiler
- Between £14,000 and £47,000 was invested in each of the top ten homes
- No obvious direct correlation was found between the amount of money spent and the carbon

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Region: Gloucestershire, UK

savings achieved, due mainly to the wide variation in practical opportunities for improvement, as well as differing priorities and restrictions for each household.

What were the key outcomes of the Target 2050 Community Buildings project?

The project results show a significant uptake of a wide range of measures including:

- o Fifteen lighting and glazing upgrades – these are relatively straightforward measures that can be usually installed within the £3,000 Target 2050 grant
- o Six upgraded heating systems and controls – for halls that are on mains gas, upgrading to a more efficient boiler with proper controls is very often the most cost-effective solution
- o Three solid wall and sloping ceiling insulation measures – it is very encouraging to see some of the halls tackling the difficult issue of insulating solid walls and sloping ceilings. The capital grant was key to these going ahead
- o Three ground source heat pumps, five new solar PV systems installed or approved, and a solar thermal hot water system helping halls to generate renewable energy and reduce costs into the future

The savings made during the project were:

- o 70,290 kWh/year energy savings
- o £4938 cost savings
- o 28.6 tCO₂/year carbon savings
- o £105,210 lifetime cost savings (based on 2008 energy prices)
- o 630 tCO₂ lifetime carbon savings (assumes 60% of units exported; benefits quantified are savings only)

A small number of halls used the opportunity to obtain capital grants and technical support to install several measures simultaneously as part of a significant refurbishment. These became the ‘exemplar’ halls and continue to be a source of inspiration and motivation to other halls and the wider community.

Several of these halls have been nominated for awards and all have reported lower bills and warmer, better-used halls and interest from users as to why and how the changes have been made. All of these halls were successful at using the Target 2050 capital grant to lever in significant resources from other funders.

Another key result of the project was the amount of external funding that has been ‘levered in’ to the district as a result of the programme. The grants and support offered by Target 2050 enabled these halls to apply for the remaining funds from a wide variety of sources. By May 2012, in excess of £191,000 was levered in by Target 2050 Community Buildings. The figure increased further once all projects were completed. The vast majority of this funding has been directed at local Target 2050 Installers’ Network companies which have carried out the work. This has been of benefit to the local economy and increased the experience and portfolio of these local businesses.

What were the key outcomes of the Target 2050 Businesses project (2007-2011)?

- o 1,300,000+ kWh of energy
- o Cost savings of at least £99,500
- o Saving of 490+ tonnes of CO₂ emissions
- o 93 businesses accessed the full service
- o 22 smaller businesses offered telephone advice only
- o 46 businesses signed action plans

Evidence of success.

Target 2050 Homes

Target 2050 Homes has provided the basis for an effective longer term targeted approach to achieving deep energy and carbon cuts in existing homes, including:

- o An advice approach and advisor experience in identifying and prioritising a range of energy and carbon saving measures in a range of house types, and with a range of households, including development of a tailored home energy report and provision of 248 detailed home

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Region: Gloucestershire, UK

surveys

- A significant range of 50 case study homes, illustrating what can be achieved and how, and the practical barriers and solutions encountered in applying solutions
- A model for dissemination through events and seminars, case studies, and 'open homes', raising awareness of the opportunities with both householders and installers
- Stimulation of the market for sustainable energy retrofit through development of a local installer network, which now has over 100 members installing a range of energy efficiency and renewable energy measures
- An understanding of the costs and householder perspective on investing in improvements, and the practical issues as regards financial support mechanisms, through the experience of managing grants programmes and the PAYS pilot, and in supporting households in identifying finance and obtaining quotations for works

The overall conclusion is that there is significant value in moving forward with an integrated non-profit local partnership model which builds further upon these positive features. By extending this to neighbouring local authority areas, we aim to achieve some economies of scale while maintaining the benefits of local knowledge and a personalised service.

The evaluation of the PAYS pilots indicated householder preference for a programme led by public/non-profit providers that are commercially impartial, and the importance that they placed on practical knowledge and expertise. In the emerging market for sustainable energy retrofit, this depends upon an open and transparent sharing of experience, and a culture of continuous learning and improvement.

While a streamlined customer journey is a positive ideal, the value of allowing for multiple entry points to a service should be recognised, and to facilitate this it is important to engage all key actors and to ensure that communication lines remain open so that problems can be resolved as they arise.

Target 2050 Community Buildings

In addition to the outcomes shown above, the Target 2050 Community Buildings project demonstrated that the provision of bespoke and expert advice, coupled with capital funding, can kick-start community buildings into action and enable important improvements to be made quickly. Many halls are then able to build on these successes and lever in further funding to complete the transition into exemplar buildings that are cheap to run, nice to use and can encourage the uptake of sustainable energy measures in the wider community.

Since the completion of the project in Stroud, the approach has since been expanded to other areas, including Swindon, Wiltshire, the Forest of Dean, Wales and Herefordshire, with similar success.

Target 2050 Businesses

Further to the savings mentioned above, there was a 32% increase in Target 2050 businesses consistently checking energy bills against meter readings and 18% increase in businesses using actual meter readings rather than estimated readings when paying invoices.

The programme has helped almost 100 organisations to take a serious look at their energy use and their potential to generate renewable energy. The extensive follow-up support and advice provided ensured that the businesses went on and implemented a wide range of actions that have resulted in significant ongoing cost savings for many of these companies.

By reducing demand and increasing local renewable energy capacity, the Target 2050 project has helped local companies to be:

- more financially secure through difficult times
- less vulnerable to energy price hikes in the future
- more streamlined and self sufficient

The project also further boosted the environmental credentials of not only the businesses and installers involved but the whole of Stroud district.

The Target 2050 Business scheme has since been used to develop similar programmes in other districts, including future paid-for services where funding is not accessible. Following the project,

GOOD PRACTICE FICHE

Region: Gloucestershire, UK

Stroud District Council continued to offer a 50% subsidised service to their small and medium sized businesses.

Factors that might hamper the transfer:

The transfer of the **Target 2050 Homes** project to other partners is very possible providing the partnerships between active agencies are strong and planning is detailed. It is also important to consider the scope of area covered. The ideal programme should ensure that it is:

- tailored to the practical realities of the existing building stock and its complexity and imperfections
- designed to deliver to the real and multiple practical needs of households and home-owners
- able to engage with all key actors in the supply chain, and deliver to their needs
- intelligent, and can flex and develop as providers learn, markets develop, and external factors change
- open and transparent, allowing benefits

The transfer of the **Target 2050 Community buildings** project to other partners is very possible. However, partners should account for the fact that timescales for the implementation of measures in community buildings can be very protracted. The community buildings in the UK are run by volunteers working in their own time (often around work commitments) and with limited resources. Partners will need to account for this if the set-up is similar. The following key themes and learning points emerged from the project and would be worth considering in other partner areas:

- Help with simple behavioural change and better heating control usage is crucial
- Learning to deploy the 'sustainable energy hierarchy' when planning improvements
- Finding reputable installers
- Provide support in negotiating with planners, with regard to heritage buildings
- Communication with hall users and the wider community about the improvements
- Capital grants were vital in making small measures happen quickly, as well as enabling larger ones
- Critical under-utilisation of halls leads to very long payback times for some measures
- Improved halls report better utilisation, raising income and reversing the negative cycle
- Small savings make a big difference to constrained budgets

The transfer of the **Target 2050 Businesses** project to other partners is very possible, providing a number of factors are considered. For example, it is crucial that there are financial gains for the businesses concerned. It's also important to consider how businesses are engaged. The Target 2050 Business project took a while to take off until it was linked in via organisations that businesses trusted and used regularly. Once this happened, the uptake increased rapidly. Further points to consider are noted below:

- The private sector is driven by the need to generate profit and the reduction of overheads and running costs are critical to this objective. As a result there is often a healthy appetite amongst businesses to reduce energy costs although very often support is needed to identify the most effective options
- Giving detailed illustrations for the potential for year on year cost savings within the individual business energy reports was also key to achieving commitment to install measures from business owners
- Where capital investment was required for measures, particularly for those with longer payback periods, the availability of financial support mechanisms such as grants, loans and tax incentives greatly increased the likelihood of uptake.
- The focus on no-cost measures and especially improved monitoring proved very important – the end of project surveys showed a 32% increase in Target 2050 businesses consistently checking energy bills against meter readings and an 18% increase in businesses using actual meter readings rather than estimated readings when paying invoices
- The ongoing financial savings for local businesses involved are significant, with Stroud-based

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
<p>businesses now saving almost £100,000 on energy bills annually. This is money that would otherwise have predominantly passed out of the district to electricity, gas and fuel suppliers but is now helping these businesses to be more competitive and survive in difficult economic times.</p> <p>It became apparent early on in the project that recommendations would be prioritised not solely on the basis of cost or saving potential but also on the wider business impacts. This shows that whilst businesses are prepared to consider energy saving initiatives, these will always be secondary to day-to-day priorities.</p>		
Time required to complete the BP		2-3 years depending on how many themes are completed
Contact details to obtain further information on the practice		
Contact name	Neil Towler or Paul Sheridan	
e-mail	neilt@severnwye.org.uk or pauls@severnwye.org.uk	
Organisation	Severn Wye Energy Agency	
Type of Organisation	Independent SME and not-for-profit sustainable energy education charity	
Website	http://www.severnwye.org.uk/fileadmin/Resources/SevernWye/Publications/Target_20_50_Homes_-_Report.pdf http://www.severnwye.org.uk/fileadmin/Resources/SevernWye/Publications/Target_20_50_Community_Buildings_-_Report.pdf	

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
Title of the good practice:	G6. European Sustainable Energy Award for Prisons (E-SEAP)	
Partner region:	Gloucestershire, UK	
Location data:	UK	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector 		
Description of the practice:		
<p>E-SEAP is an award framework for prisons developed as part of an Intelligent Energy Europe project that was delivered between 2011 and 2014. The framework involves prisons being assessed against criteria under three main elements:</p> <ol style="list-style-type: none"> 1) Buildings and Energy Management 2) Education and Training 3) Communities <p>Depending on their total assessment score, each prison then achieves either the bronze, silver or gold award (or, of course no award at all).</p> <p>The project itself involved prisons having a preliminary assessment carried out in order to identify areas for development, followed by an intense period of external support, culminating in prisons being re-assessed towards the end of the project.</p> <p>Under the buildings and energy management element, a full energy survey of the prison premises was carried out resulting in the production of a full report and action plan detailing where savings could be made. Severn Wye's business staff then supported each prison in implementing actions to achieve these savings.</p> <p>Under the education and training element, Severn Wye's education staff supported prisons to delivering training to prison staff and the prisoners themselves. Prison staff received a two hour training session focussing on how they could save energy in the home. This made it relevant and incentivised them to take part, whilst helping to instigate positive behaviour change that also had in impact on prison consumption. This training was CPD accredited so that it could be used as evidence towards staff continuing professional development.</p> <p>The prisoner training was delivered using one of two routes:</p> <ol style="list-style-type: none"> 1) The delivery of a short two-day course delivered by Severn Wye staff. 2) The delivery of a longer, accredited course delivered by prison staff supported by Severn Wye staff. <p>There were three main aims of this training:</p> <ol style="list-style-type: none"> 1) Improved energy-saving behaviour among prisoners, helping to reduce prison consumption. 2) Helping prisoners to gain employment post-release. 3) Helping to reduce rates of re-offending through reducing prisoner's energy bills post-release, helping them into employment and providing them with transferable skills. <p>Under the community element, the prison was supported in running events for visiting families and the community local to the prison. These events were aimed at alleviating fuel poverty and those attending received a range of information and support including being signposted to further sources of support.</p>		
Key lessons learned:		

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- The delivery of accredited training incentivises prisoners as they can see a potential route to employment post-release.
- Where possible this training should be linked to practical work experience to develop practical as well as academic skills.
- Prison staff is incentivised by thinking about how to save energy in the home but knock on benefits are also felt in terms of reducing the prison's own consumption.
- Prisons provide a key route to working with those in fuel poverty, both prisoner's families and the local communities surrounding prisons which are often located in areas of economic deprivation.

Performance indicators linked to the practice

- **Number of households engaged in support programmes: minimum of 350.** The staff, prisoners and families were trained or given advice how to improve the energy efficiency in their homes.
 - In the UK, 175 members of prison staff received energy efficiency training
 - 157 prisoners received accredited training
 - 18 prisoners received Severn Wye short course
 - 8 'energy surgeries' held in prison visitor centres and areas surrounding prisons.
- **(%) Reduction of annual primary energy consumption in public buildings**
 The following reductions in energy use per prisoner were achieved in the UK prisons:
 - HMP Cardiff: 11% (7% gross)
 - HMP Hewell: 7% (0% gross)
 - HMP Littlehey: 1% (joined the programme late) (5% gross)
 - HMP Usk and Prescoed: 3% (8% gross)
 - HMP Swansea: 3% (3% gross)

Indicators of success linked to the practice:

Improvements in assessment scores by prison:

Prison	Initial assessment score	Post support assessment score	Award achieved
HMP Cardiff	38%	80%	Gold
HMP Hewell	26%	68%	Silver
HMP Littlehey	23%	57%	Silver
HMP Swansea	40%	77%	Gold
HMP Usk & Prescoed	33%	64%	Silver

Evidence of success.

In order to make this level of progress, different departments within each prison were required to work together an institution-wide ethos of energy-saving achieved. This is not easy when you consider the size of the establishments involved.

Factors that might hamper the transfer:

- Current priorities of the prison service will determine the amount of time and dedication

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
<p>given to the scheme.</p> <ul style="list-style-type: none"> • Support of the prison service at a strategic level is key as is support from senior management within each prison. 		
Time required to complete the BP	2-3 years	
Contact details to obtain further information on the practice		
Contact name	Rachel Brain	
e-mail	rachelb@severnwye.org.uk	
Organization	Severn Wye Energy Agency	
Type of Organisation	Private not-for-profit SME	
Website	www.severnwye.org.uk	

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
Title of the good practice:	G8. Link to Energy	
Partner region:	Gloucestershire, UK	
Location data	Gloucestershire, UK	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector • Innovation 		
Description of the practice:		
<p>Severn Wye Energy Agency initially set up a local network of installers in 2007 recognising the need for a more holistic approach in delivering project funded energy efficiency improvements to householders, businesses and communities in the region, so as to ensure the maximum take up of installed measures. In 2011 this network of 'Link to Energy' installers were made more readily available to the public with the setting up of a new, user friendly website www.linktoenergy.org.uk</p> <p>Improvements and adaptations were made to the website in 2013 as part of the 'Countdown to Low Carbon homes' European project and again in 2015 to ensure that it was up to date with current website design and capability requirements.</p> <p>As of January 2017, The Link to Energy website has 122 registered installer members and 15 supply chain members. This will increase in line with secured funding to increase our support to SMEs through our European Structural Investment funded Target 2020 programme.</p> <p>Registered installer members are able to offer a full range of energy efficiency and renewable energy improvement measures to domestic, business and communities across Gloucestershire and South Gloucestershire. This includes everything from loft and cavity wall insulation to external insulation, gas boilers, heat pumps, solar panels and cooling systems for businesses.</p> <p>Supply chain members typically offer self-installed measures such as LED lighting and chimney balloons. It is also possible to view and order technologies such as solar batteries and heat batteries.</p> <p>Of the 137 members, the vast majority are based within Gloucestershire and South Gloucestershire. Each Local Authority area within Gloucestershire has installer or supplier members represented, ensuring that Local economies are benefitting from improvements being made to homes and businesses.</p> <p>The vast majority of Link to Energy members are SMEs with a small number of larger companies offering services in the area. These members are typically included to ensure that householders are able to access funding schemes such as the Energy Company Obligation (ECO).</p> <p>The Link to Energy website includes functionality that allows users to locate installers local to them. A postcode area or location can be entered providing a list of installers, the closest to them being at the top of the list. These results can be filtered by technology or measures and a contact form with the customer details and requests can then be sent to one or more of the recommended installers simultaneously. This generates an email to the installer and the project manager who then follows up with the installer or the client as to the outcome. Automated reminders are sent to both the installer and the client if the installer hasn't been in touch within the agreed three working days.</p>		

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The Link to Energy website includes information pages and installer searches specific to businesses and community groups. This allows these organisations to locate and contact only those installers that can service their requirements. Case studies of local businesses that have made energy improvements can also be read or downloaded.

The domestic section of the Link to Energy website incorporates additional information including advice pages on:

- Installer accreditations
- Finding the finance
- Home energy assessments
- Home energy improvements
- Over 50 local case studies of homes that have made energy efficiency improvements
- Information and links to the Warm & Well scheme

The Link to Energy site also includes functionality that allows Severn Wye Energy Agency to report on the following:

- The number of enquiries sent by Local Authority area
- The total number of installations completed by Local Authority area
- Site visitor statistics and analytics
- The value of work completed by Local Authority area
- The numbers of technologies and measures that users are requesting quotes for

Regular networking and information events are provided to support all registered Link to Energy installers. These are held quarterly, though additional events have also been included when new incentives or funding schemes have dictated that more information would be useful to local installers, the launch of the Green Deal for example. Speakers and topics discussed at installer events have included:

- Updates on projects of interest from Severn Wye Energy staff
- Installer members promoting their own products and services
- External speakers covering areas of interest to local installers

Speakers have included representatives from:

- The Federation of Master Builders
- Local Authority staff
- Insulation and heating product manufacturers
- Sector skills body – construction skills
- South Gloucestershire and Stroud (SGS) College

Several funded training sessions for local installers have also been held in the region. This has included:

- External wall insulation manufacturer training
- Internal wall insulation manufacturer training
- 'Winning the Contract' understanding public sector procurement for SMEs

Installers are in regular contact with the scheme manager via email, telephone and during face-to-face meetings to ensure customer referrals are managed well and to pass on information relating to local, regional and national updates that may be of interest or relevance.

The Link to Energy website includes a section dedicated to installer members that incorporates the

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following:

- An overview page for potential new installers and suppliers to learn more about the service
- A news and events page
- Useful information – this includes information specific to installers.
- A document library
- A Link to Energy Twitter feed

Future Link to Energy Service developments aim to include the following:

- A quarterly installer newsletter distributed to all members
- Research to understand the training requirements of local installers and to ensure that relevant and required courses are made available in the region
- The Development of existing relationships with bodies such as SGS College, the Federation of Master Builders and the sector skills councils to allow delivery of courses

The existing Link to Energy installer network database allows domestic, business and community customers to obtain quotations from installer members, and ultimately have improvement measures installed. The database incorporates an automated system that allows **Warm & Well** to determine the value of completed work and to request a referral fee from the installer where a lead has provided work to them. This referral fee has historically been set at 3% (+VAT) of the total value of the work completed. This rate allowed us to draw a small income whilst not penalising the installer. This avoids significant additional costs being passed onto the client.

The online installer database incorporates a number of reporting facilities that allow Severn Wye to report on completed job and referral fee values across the individual local authority areas, or for the region as a whole. These can also be broken down by domestic, business or community work.

Note: Links to other examples of good practice are shown in **bold letters**

Performance indicators linked to the practice

- o **Number of households engaged in support programmes: Link to Energy Installers have supported 353 households** as direct referrals from Severn Wye Energy Agency between April 2013 and April 2017. The value of these installations amounts to £1,333,297.40.
- o Number of households with improved energy consumption classification
- o (kWh) Annual energy savings in households
- o Number of households with improved energy consumption classification

Indicators of success linked to the practice:

Since 2013 over 1200 householders, businesses and community groups have used Link to Energy sending over 3000 enquiries to installer members.

Direct referrals from Severn Wye Energy Agency between April 2013 and April 2017 resulted in Link to Energy Installers supporting 353 households. The value of these installations amounts to £1,333,297.40.

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
Evidence of success.		
<p>In 2012, Link to Energy was selected as an exemplar service by the 'Green Skills Alliance' (made up of the UK Sector Skills Councils) for developing best practice around skills, training and innovation for the low carbon audience. A report was produced in 2014 detailing the Service provided at that time.</p>		
Factors that might hamper the transfer:		
<ul style="list-style-type: none"> ○ The time and finance required to design and launch an online portal that allows customers in a specific area to find and contact appropriate local accredited installers ○ The ongoing required management of the service to ensure the success of relationships made between installers and customers ○ The ongoing promotion of the site to ensure the service presence in the area it serves 		
Time required to complete the BP	1 Year	
Contact details to obtain further information on the practice		
Contact name	Neil Towler	
e-mail	neilt@severnwye.org.uk	
Organization	Severn Wye Energy Agency	
Type of Organisation	Private SME and not for profit sustainable energy education charity	
Website	www.linktoenergy.org.uk	

GOOD PRACTICE FICHE		Region: Gloucestershire, UK	
Title of the good practice:		G9. SustainCo (Sustainable Energy for Rural Communities)	
Partner region:	Participant Name	Country	
	Liaison Committee for Sustainable Energy (CLER) www.cler.org	France	
	(GERES) Groupe Energies Renouvelables, Environment et Solidarites	France	
	Severn Wye Energy Agency	UK	
	Caritasverband (CARITAS) Frankfurt, Germany -	Germany	
	Focus Association for Sustainable Development	Slovenia	
	Energy Agency of Plovdiv (EAP) Bulgaria	Bulgaria	
	Institute de l'Ecologie en Milieu Urbain (IDEMU)	France	
Location data		England and Wales	
Topic of the practice: Thematic coverage			
<ul style="list-style-type: none"> • Professionalization of the construction sector • Innovation • New Financial Instruments (Cost Optimisation) 			
Description of the practice:			
<p>SustainCo supported the European vision for the energy performance of buildings, that by 2020 all new buildings should be nearly Zero Energy Buildings (nZEB) The SustainCo project aims to raise awareness of, and support development of, low energy building projects, with special emphasis on rural areas.</p> <p>SustainCo aims to increase the visibility of both new-build and renovation, with the aim of capacity and confidence building in the public sector. Activities included:</p> <ul style="list-style-type: none"> • Development of Toolkits which focus on technical and financial aspects of nZEB in relation to energy efficiency and renewable energy usage. • Promotion of nZEB case studies. • Capacity building for energy professionals - development and hosting of a capacity building event and training for project developers including conferences, seminars, training and site visits. • Support of nZEB Pilot Projects. • Supporting Covenant of Mayors signatories in rural areas. 			
Performance indicators linked to the practice			
<ul style="list-style-type: none"> ○ Number of households engaged in support programmes: 1278. 1274 households had support from the enquiry service. 4 households were used as domestic case studies and received energy advice and support. ○ Number of households with improved energy consumption classification: 96. Up to 96 buildings only in UK were renovated and improved their energy consumption classification. ○ (%) Reduction of annual primary energy consumption in public and domestic buildings ○ Capacity building for energy professionals 			

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
Indicators of success linked to the practice:		
<p>The SUSTAINCO web-based technical and financial toolkits were developed to serve as guide on how to achieve nZEB standard in retrofit or new-build houses.</p> <p>Severn Wye produced five detailed case studies on nZEB buildings.</p> <p>In the UK, Severn Wye led three training events, one capacity building conference, and two workshops with study tours to nZEBs. These events built knowledge and capacity in relevant target groups (developers, architects, planners, etc.) on current and upcoming nZEB standards.</p> <p>During the lifetime of the project Severn Wye's SustainCo Advice Team facilitated more than 1300 enquiries with respect to advice on nZEBs.</p>		
Evidence of success.		
<p>Of the participants who attended events run by SustainCo, 94% were satisfied with the overall quality. 72% of participants were likely to change their current working practices.</p> <p>Average overall results of Case Studies in the project- households:</p> <ul style="list-style-type: none"> • Investment cost: 1 226 €/m2 • Primary energy need: 76,5 kWh/m2/a • Annually Heat Demand: 15 kWh/m2/a • Investment cost of RES: 124 €/m2 • Annual RES generation: 63 000 kWh/a (86% coverage Primary energy need) <p>Average overall results of Case Studies in the project – public buildings:</p> <ul style="list-style-type: none"> • Investment cost: 1 277 €/m2 • Primary energy need: 127 kWh/m2/a • Annually Heat Demand: 41 kWh/m2/a • Investment cost of RES: 82 €/m2 • Annual RES generation: 49 000 kWh/a (16% coverage Primary energy need) 		
Factors that might hamper the transfer:		
<p>Not all countries had a definition of what an nZEB is. It was important to research current government position and for the purpose of project we had to propose a definition for the UK.</p>		
Time required to complete the BP	36 Months	
Contact details to obtain further information on the practice		
Contact name	Sarah Dittmann	
e-mail	sarahd@severnwye.org.uk	
Organization	Severn Wye Energy Agency	
Type of Organisation	Private SME and not for profit sustainable energy education charity.	
Website	www.severnwye.org.uk	
Fiche completed on date:	09/03/2017	

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
Title of the good practice:	G10. Your Green Future (YGF)	
Partner region:	Gloucestershire, UK	
Location data	South West and Midlands, UK	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector • Innovation 		
Description of the practice:		
<ul style="list-style-type: none"> ○ <i>Education of young people and inspiring them to pursue jobs in the green sector, including jobs in construction and installation.</i> <p>Your Green Future is a 2-day sustainability event aimed at engaging secondary school students (aged 11-18) on the role of sustainability in innovation, retail, energy, construction and waste and how their careers in the future might help to develop a low carbon future.</p> <p>The UK low carbon economy is growing at 7% a year and this continued growth sees new skills needed at all levels. Yet businesses say they do not have the skills to meet growth, notably critical Science Technology Engineering & Maths skills (predicted shortfall of 50% by 2020 - Institution of Mechanical Engineers). To address these challenges it is vital that young people entering work are able to play their part. They need to be informed of the opportunities that are open to them, and given the necessary support to gain the appropriate qualifications and skills. This is not currently being achieved. For instance in 2015 we surveyed 669 young people from across the South West & Midlands and only 30% knew what a low carbon economy was and few could identify industries that have a link to its development.</p> <p>Enhancing young people's prospects, including providing them with a clear view on the current job market and training opportunities, will also help prevent youth unemployment - in 2015 young people are nearly three times more likely to be unemployed than the rest of the population and our survey of 669 young people found that 85% would like to speak to more people about job opportunities.</p> <p>These challenges were a call to action and our response was 'Your Green Future', which was developed in 2010 by a consortium of organisations, including Severn Wye Energy Agency, Rotary and InterClimate Network, who were overseen and driven by John Davidson OBE. In 2012 Severn Wye Energy Agency became the lead partner, in order to further develop existing approaches and deliver events throughout the UK.</p> <p>Each event involves up to 500 secondary school students working with over 30 businesses as together they tackle sustainability in a series of fun, interactive workshops. Each day usually includes:</p> <ul style="list-style-type: none"> ○ A key note speech ○ Workshops ○ An interactive exhibition hall where students have a focused activity which involves speaking to organisations. 		
Performance indicators linked to the practice		
<ul style="list-style-type: none"> ○ Number of households engaged in support programmes: 3611 students have been involved in Your Green Future. Using the 90% mean of the proportion of students and teachers making changes to their energy behaviours in the Young Energy People! Project (another Best Practice example), it is anticipated that 3250 households would have been engaged. ○ Education – a better understanding of how integrated sustainability already is within business and what the needs are in the future to help create a low-carbon economy. There may be an indirect impact on energy behaviours at home following some activities at the 		

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
event.		
<p>Indicators of success linked to the practice:</p> <p>The West of England and Solihull YGF events have become a permanent feature of both the local authorities and local secondary schools calendars. They are incredibly well received and popular with many of the businesses who support the event as a way of engaging with the next generation of employee's and an opportunity to promote their organisation in their local area.</p> <p>A key element of each event is the pre and post event surveys which are given to each student. Prior to the event we ask the students which industries they think are involved in a sustainable economy to which they often answer energy and engineering but when we ask these questions after the event the results are very different, they still understand the importance of energy and engineering but they also appreciate its role in retail, construction, waste and land management.</p> <p>A number of businesses use the event to fulfil their Corporate Social Responsibility objectives and send their graduates to it as a training exercise; however, we are looking at working with the University of the West of England to provide attending mentors with a qualification along the lines of communicating science.</p>		
<p>Evidence of success.</p> <p>Severn Wye Energy Agency has held:</p> <ul style="list-style-type: none"> ○ 13 events ○ Over 130 schools have attended the events ○ Over 3000 students aged between 12-18 ○ Over 270 Businesses have supported the events 		
<p>Factors that might hamper the transfer:</p> <p>These are expensive events to fund*, often in the region of £25,000; however, if funding was available then the event is readily transferrable as long as there are sufficient schools and businesses local to the event.</p> <p>*Funding for the UK events comes from a wide variety of funders including the national lottery, local authorities, the rotary club and private sponsorship.</p>		
Time required to complete the BP	4-6 months per event	
Contact details to obtain further information on the practice		
Contact name	Karen Robinson	
e-mail	karenr@severnwyenergy.org.uk	
Organisation	Severn Wye Energy Agency	
Type of Organisation	Private SME and not-for-profit sustainable energy education charity	
Website	www.yourgreenfuture.org.uk	

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
Title of the good practice:	G11. Young Energy People	
Partner region:	Gloucestershire, UK	
Location data	Gloucestershire, Wiltshire and Wales (UK)	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector 		
Description of the practice:		
<p>Young Energy People is a sustainable energy project aimed at students in secondary schools (aged 11-18 years). It aims to educate these students in energy management and renewable energy technologies whilst also helping their schools to become more efficient in their energy use. In this way, it helps to prepare student for potential employment with the ever expanding 'green economy' whilst improving the sustainability of their school's operations. As an added benefit, students also develop a range of transferable skills including employability skills.</p> <p>A student 'School Energy Management Team' (SEMT) is recruited in each school via an application and interview process (developing key employability skills). This team of students receive training in energy management and renewable energy technologies before going on to carry out a survey of their school buildings.</p> <p>Following the survey, they develop a report containing their findings and an action plan for improving the energy efficiency and sustainability of their school. These findings and action plans are presented to school governors and senior leadership teams where elements are amalgamated into the school's development plans.</p> <p>This is followed by an energy campaign led by the SEMT aimed at encouraging positive behaviour change towards reducing energy use.</p> <p>Students are then provided with opportunities to apply the knowledge and skills they have developed to a work context as part of their planned work placements. During these placements, they repeat the energy survey for the work premises where they are based and report their findings and action plan back to the business concerned.</p> <p>The programme originated as a pilot project utilising funding through the 'Intelligent Energy Europe' programme. Since then it has been funded locally through Local Authority funding.</p> <p>A total of 31 secondary schools have completed the programme across Gloucestershire, Wiltshire and Wales.</p> <p>The project was awarded an Ashden Award for Sustainable Energy in 2011.</p>		
Performance indicators linked to the practice		
<ul style="list-style-type: none"> • Number of households engaged in support programmes: At least 92 <p>Of those directly involved in the project, 82% of teachers and 98% of students indicated that their behaviour had become more energy conscious as a result of taking part in the project. This amounts to an impact on at least 92 households.</p> <p>To date, the project has engaged approximately 25,000 school students with a knock-on effect into these student's homes.</p> <ul style="list-style-type: none"> • (%) Reduction of annual primary energy consumption in public buildings <p>On average schools reduced their annual energy consumption by 22.7%.</p>		

GOOD PRACTICE FICHE

Region: Gloucestershire, UK

Indicators of success linked to the practice:

- On average schools reduced their carbon emissions by 22.5%
- The 29 Gloucestershire schools reduced their energy bills by an average of 12.7%*, reducing their annual energy bills by a total of £158,000. This is an average saving of £5,448 per school.
- Note: There was a steep increase in the unit cost of both gas and electricity during this period.
- 100% of students enjoyed taking part in the project.
- 100% of teachers and 87% of students felt that the project had been a success in their school.
- 82% of teachers and 98% of students indicated that their behaviour had become more energy conscious as a result of taking part in the project.
- 84% of students felt that their teamwork skills had improved as a result of taking part in the project.

Evidence of success.

The YEP project was awarded an Ashden Award for Sustainable Energy in 2011. (See <https://www.ashden.org/winners/swea11> for further details.)

The project also received excellent feedback from both students, staff, school governors and participating businesses:

Feedback from Teachers

‘Farmor’s school is committed to environmental issues and the YEP! project is ideal to enhance this. The project offers practical benefits that students can feel a part of to help reduce energy waste and costs to the school plus the environment at large. The students who are taking part are learning lots of useful skills that extend beyond the YEP! project such as public speaking, interview skills, team working and research skills. For Farmor’s school the intention is that in the near future the YEP project becomes part of a multi-agency approach to environmental issues that affect our school and the wider community.’

- Simon Ditchfield, Teacher & YEP! Project Coordinator, Farmor’s School

‘I would say that Y.E.P! has been an excellent opportunity for my students to get involved in. The support from Severn Wye Energy Agency, has been excellent in planning and providing me with the resources and support that is needed. The benefits from the project will have a big impact on the school in terms of more positive behaviour towards using energy and hopefully saving money.’

- Miss McKinley, Geography & Year 10 tutor, Severn Vale School

‘Many thanks for all your help, you have been the driving force behind the group, doing wonders for their self-esteem, sense of achievement and developing their professional skills.’

- Neil Williams, Geography Department, Archway School

‘The presentation to the governors went very well; the students were fantastic. They asked could they dress as ‘business people’ so they came all dressed up. Although they were very nervous they had practised several lunchtimes this week and came across so well, especially as there were about 20 adults there. They handled the questions really well and I’ve had lots of positive comments about their presentation. YEP! now has a strong reputation with the governors.’

- Simon Ditchfield, Teacher & YEP! Project Coordinator, Farmor’s School

“The presentation went well – stimulated lots of questions from SLT and a desire to act on our report. They are now keen for the group to start on the next stage of getting the school involved.”

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
<ul style="list-style-type: none"> - Chris Reynolds, Teacher & YEP! Project Coordinator, The Crypt School <p>“The head was VERY impressed with the YEP! team’s presentation. ”</p> <ul style="list-style-type: none"> - Mrs R Weiss, Teacher & YEP! Project Coordinator, Maidenhill School <p>‘The support received from Severn Wye Energy Agency has been fantastic. The resources are brilliant and have been improved since the first pilot project. It has also promoted interschool sharing. It is fantastic having the support at the end of an email, and regular meetings at school to help keep the campaigning on track.’</p> <ul style="list-style-type: none"> - Julie Parsons, Teacher & YEP! Project Coordinator, Chosen Hill School <p>Feedback from Senior Leadership</p> <p>‘Having students involved from the outset has been brilliant – the core YEP! Team are still just as keen and happy to now oversee further implementation of our energy awareness plan.’</p> <ul style="list-style-type: none"> - Beth Warren, Deputy Head Teacher, Bournside School <p>Feedback from Governors</p> <p>‘...at Wednesday's Premises Committee meeting we had a superb presentation by a group of students all about the fantastic survey they had completed of the school's energy use and potential for cutting down consumption, as part of your fab YEP! programme! It was a brilliant piece of work (supported wonderfully by your education officer – sorry, I didn't get his name) and the report is being taken very seriously, with many of the 'quick win' suggestions to reduce energy consumption being taken on board as soon as possible.’</p> <ul style="list-style-type: none"> - Beth Whittaker, Governor, Archway School <p>Feedback from Business</p> <p>‘The audit and review the YEP! students and Severn Wye Energy Agency carried out has really opened my eyes and I believe once I present to the General Manager, and hopefully the CEO, it will show them a dual role, business development /cost saving possibility that they will not be able to ignore. The knock on from this is the environmental impact reduction that comes with these measures which as a bonus is fantastic and I believe that this might carry almost as much weight with the company as the cost savings when all is said and done.’</p> <ul style="list-style-type: none"> - Hotel Manager, The Four Pillars Hotel. - 		
<p>Factors that might hamper the transfer: <i>Please indicate problems or barriers that could appear when transferring the good practice to other partner.</i></p> <p>The level of success to a great extent depends on:</p> <ol style="list-style-type: none"> 1) The degree to which the project activities can be incorporated into the existing curriculum. 2) The amount of time that teachers are able to dedicate to the project (we found a lack of teacher time to be a barrier in some instances). 3) The level of support from school senior managers. 4) The presence (or otherwise) of a keen member of staff. 		
Time required to complete the BP	18 months (6 months preparation; 12 months delivery)	
Contact details to obtain further information on the practice		
Contact name	Mark Stead	

GOOD PRACTICE FICHE		Region: Gloucestershire, UK
e-mail	marks@severnwe.org.uk	
Organisation	Severn Wye Energy Agency	
Type of Organisation	Private SME and not-for-profit sustainable energy education charity	
Website	www.severnwe.org.uk	
Fiche completed on date:	03/03/2017	

GOOD PRACTICE FICHE		Region: Podkarpackie
Title of the good practice:	P3. Podkarpackie Academy Certification	
Partner region:	Podkarpackie Region (Poland)	
Location data	Rzeszów	
Topic of the practice: Thematic coverage <ul style="list-style-type: none"> ▪ Professionalization of the construction sector 		
Description of the practice: <p><u>General objective</u></p> <p>Improving the professional skills of people over 45 years-old with building qualifications: architectural, construction and installation.</p> <p><u>Detailed objectives</u></p> <ul style="list-style-type: none"> • Updating knowledge about thermal energy buildings to 195 people with building qualifications enabling them to issue energy performance certificates of buildings; • learning support program used for preparing building energy certification for 195 enabling them to issue energy performance certificates of buildings; • promoting active professional attitude focused on personal development. <p><u>Target group</u> people over 45 years-old with building qualifications: architectural, construction and installation. It is a good example connected with experts and their awareness concerning need for additional education and improving their qualifications.</p> <p><u>Project activities</u> series of training courses for 195 beneficiaries over 45 years old in order to help them to get energy performance certificates of buildings;</p> <p>1. Training: Preparation of energy performance certificates. The training discusses the methodology of the certificates together with exercises in order to improve practical skills. Training was adapted to the situation of people over 45 years old holding a building license. The need to organize training courses in this field stemmed from the analysis of requests for specific knowledge and skills in the region. Classes were conducted in a way which did not interfere with day-to-day professional work – during the weekends. The training consisted of 32 hours of theoretical and practical classes (4 days x 8 hours). Program of training: Legal basis; Evaluation of the thermal protection of the building; RES; the methodology of calculation; Execution of training energy certificates; The use and operation of the thermal imaging camera.</p> <p>2. Training: Support for the drawing up of energy certificates. Each course consisted of 16 hours of practical classes, organized in participants' free time (weekends). Program of training: The scope of the building's data; discussion of the program in terms of preparation; The choice of computing solutions; Defining partitions, zones and premises; Entering data of heating and lighting installations; Analysis of errors; Generating the final certificate; Implementation of energy certificates.</p> <p>Financial resources: 150.000 Euro – finance from European Social Fund under Operational Program Human Capital 2007 – 2013 + own contribution of participants - 10% costs of training.</p>		
Performance indicators linked to the practice		

GOOD PRACTICE FICHE

Region: Podkarpackie

Indicators of success linked to the practice:

- Number of certificates issued: 390
- Number of training courses: 26
- Number of trained participants over 45 years old: 195 (including 39 women)
- Working adults who completed the project: 195 (39 Women)
- Facilitating acquisition of new skills and qualifications for 195 people
- The standardization of qualifications for certification of 195 people

Evidence of success.

- Raising professional skills of 195 people over 45 years old with building qualifications: architectural, construction and installation;
- Updating knowledge about thermal energy buildings to 195 people with building qualifications enabling them to issue energy performance certificates of buildings;
- Learning support program used for preparing building energy certification for 195 enabling them to issue energy performance certificates of buildings;
- Promoting active professional attitude focused on personal development;
- Promotion of lifelong learning and continuous improvement of skills among 195 participants and among society;
- Being more competitive on the labor market in the construction sector in Podkarpackie Region;
- Prolonging the professional activity of people over 45 years of age who participated in the project;
- Increasing the chances of career advancement among people who completed trainings.

Factors that might hamper the transfer:

- Lack of problems justifying the needs for this type of training in another region or country.
- Problems with the recruitment of the target group and its resignation during trainings.
- Problems with the source of funding for this kind of actions - the needs for adequate funding or the need to take fees from participants.

Time required to complete the BP | 2 years

Contact details to obtain further information on the practice

Contact name	Marek Zdunek
e-mail	biuro@pae.org.pl
Organization	Podkarpackie Energy Agency in Rzeszów
Type of Organisation	private
Website	www.pae.org.pl

GOOD PRACTICE FICHE		Region: Podkarpackie
Title of the good practice:	P4. Podkarpackie Low-Energy Consumption Technologies Transfer Centre's Passive House	
Partner region:	Podkarpackie Region (Poland)	
Location data	Rzeszów	
Topic of the practice: Thematic coverage <ul style="list-style-type: none"> • Activation of demand and combating energy poverty • Professionalization of the construction sector • Innovation 		
Description of the practice: <p>Presented building, will serve as the new headquarters of Podkarpackie Regional Chamber of Civil Engineers, and will play an important role as Podkarpackie Low-Energy Consumption Technologies Transfer Centre.</p> <p>Basic technical data: total net area of the building: 1,005.11 km^w, cubic net area of 4100,6m³.</p> <p>The energy performance of the building: The building was designed as a standard passive house:</p> <p>a) expected energy consumption for heating: 15 kilowatt-hour / m² / year.</p> <p>b) expected air tightness: n50 <0.3 exchange / h</p> <p>One of the main objectives of this structure is to develop the business of the Chamber, focused on the distribution of equipment and renewable energy technologies and training, organization of conferences and workshops in the field of knowledge engineering and construction art.</p> <p>Implementation of the Centre was launched in June 2016 by carrying out preparatory works, preparing the ground for further construction. The object will serve as office and exhibition. Documentation of the project was developed in a design office in Cracow with the active participation of the management of the Chamber. Apart from the typical function of serving the Chamber of Civil Engineers, there is an additional aim of promoting and educating in the field of energy-efficient building technologies and, therefore the level of the ground floor will be entirely intended for exhibition space and conference room.</p> <p>Project activities in the field of architecture, determining the minimum energy demand, associated primarily with the desire to achieve:</p> <ul style="list-style-type: none"> - High compactness blocks, the lowest ratio of surface envelope (A) to the volume (V) - High air tightness of the building envelope, - High thermal insulation of all external walls, - The correct orientation of windows: The preferred orientation is the south, providing the best lighting in winter and reduced overheating in summer. It is worth noting that the buildings most often overheat in the summer on the east side and the west, which results from the research of the angle of sunlight, - Appropriate selection of the surface of window openings - the size of window openings should be chosen so as to ensure a favorable intensity of daylight at this altitude, in accord with some basic activities performed in a given room. For example, in energy-efficient office buildings there is no rational justification to design glazing reaching down to the floor. - An effective system of external shading - movable awnings are installed at a significant distance from the glass set to ensure the widest gap ventilation. - Optimized design of the building - suitable for use. In buildings used in a continuous manner, a reasonable choice is a heavy construction. This type of construction makes buildings slower to overheat during the summer and can be cooled at night through the ventilation system, often with limited need for air conditioning. <p>An important and unique feature of the presented object are applied bio-climatic solutions - including reused building materials and natural ventilation. The office on the first floor to a large extent has</p>		

GOOD PRACTICE FICHE

Region: Podkarpackie

been designed with natural, non-fired clay blocks with the addition of sand. Other walls will be made of silicate blocks, plastered with lime plasters and light partition walls of plasterboard, plastered with clay plaster.

The above-mentioned materials, particularly brick clay, having a high ability to control the humidity in the room, which is especially important during the heating season. Unfired bricks are able, within two days to absorb 30 times more moisture than the fired ones. In addition, clay brick and silicate block materials have a high heat capacity and low radioactivity. For this reason, they can significantly affect the development of natural, healthy internal micro-climate. Noteworthy is the fact that for the production of unfired bricks there is required only a minimum amount of energy compared to other conventional building materials.

Another characteristic bio-climatic element is a skylight (centrally positioned above the main lobby), which in addition to its primary function will provide the possibility of natural ventilation and cooling. In addition, in the entrance hall has been placed high wall made of silicate bricks (white color) and clay blocks (green color), forming two-tone composition, referring to the aesthetics of external façades. In order to complement and underscore the project's approach, there has been designed a reception desk made from the beaten ground. The architecture of today is witnessing the formation of a new category of buildings. These are objects that can be described as pro-energy buildings. Energy of implementation should be the result of the search for the optimal solution planning, respectful of the most important aspects of utility, aesthetic and energy.

It is worth nothing that the final architectural form of the building, the selection of the deployment of photovoltaic cells and wind turbines, are an example of the fact that the utilization of renewable energy sources must not express itself only through thoughtless maximization of energy gain.

The methods of obtaining electricity from renewable energy sources:

- ✓ six wind turbines with a power of 2 kW each,
- ✓ three wind turbines with a power of 0,3 kW each,
- ✓ photovoltaic modules.

The duration of the project is approximately 12-15 months.

Performance indicators linked to the practice

- Number of households with improved energy labelling: 1
- Number of households with improved energy consumption classification: 1
- Number of households engaged in support programmes: 0
- (%) Reduction of annual primary energy consumption in public buildings:
 - ✓ Estimated energy consumption for equipment ventilation and heating and air conditioning is 21,700 kWh / year.
 - ✓ Estimated energy consumption for household is 28,300 kWh / year.
 - ✓ Estimated total balance of all the receivers installed in the facility is 50,000 kWh / year.
- (kWh) Annual energy savings in households: 0
- Number of households with improved energy consumption classification: 1

Indicators of success linked to the practice:

In order to balance the annual electricity consumed in relation to energy produced from renewable energy sources, there will be used the following solutions:

- The six wind turbines with a vertical axis of rotation: Aerocopter 450 with a capacity of 2 kW, installed on poles, in the parking lot (the use of the device will be able to produce 12,000 kWh / year)
- Three wind turbines with a vertical axis of rotation: Aerocopter 220 with a capacity of 0.3 kW, installed on poles on the roof (expected production of energy 1,400 kWh / year)
- Photovoltaic cells, designed on top of the building and on car park's roof, having a total power of 47 kW. All photovoltaic modules are made of monocrystalline silicon cells with a front metallization: Front-Contact.

GOOD PRACTICE FICHE **Region: Podkarpackie**

Evidence of success

- **VENTILATION**
The building is expected to use a distributed ventilation system consisting of six air handling units, giving the possibility of precise and economical control dependent on the conditions prevailing in the zone. Air handling units are equipped with cross and double cross heat exchangers, with efficiency of heat recovery of above 80%. Central support office and a conference room are provided with an adiabatic cooling. In addition, air handling unit serving the office is equipped with ground, air heat exchanger, which is an additional source of supplemental cooling.
- Energy self-sufficiency
- Estimated energy consumption for equipment ventilation and heating and air conditioning is 21,700 kWh / year.
- Estimated energy consumption for household is 28,300 kWh / year.
- Estimated total balance of all the receivers installed in the facility is 50,000 kWh / year.
- Passive, NZEB house.
- Annual energy consumption for heating - 15 kWh / m².

Factors that might hamper the transfer:

The transfer of good practice would involve a series of legal actions, construction and investment: purchase of land, building design, selection of the contractor, the construction of the building and use of the building for public purposes.

Transfer of this practice would last several years.

Time required to complete the BP	2 years
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Contact details to obtain further information on the practice

Contact name	Zbigniew Detyna
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Organization	Podkarpacka District Chamber of Civil Engineers
Type of Organisation	private
Website	www.inzynier.rzeszow.pl

GOOD PRACTICE FICHE		Region: Croatia
Title of the good practice:	C5. Inducing change in behaviour through energy managers and end-users capacity building - ZagEE project	
Partner region:	Croatia	
Location data	City of Zagreb	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> Professionalization of the construction sector 		
<p>Besides energy renovation, project ZagEE's secondary objectives were to develop and apply management and learning tools for use by building managers and users in order to improve energy management of newly renovated buildings. Poor maintenance can hamper the energy efficiency of lighting, heating and air conditioning systems. Additionally, regular maintenance checks can be invaluable at spotting problems and sources of waste. To ensure that energy awareness gets incorporated into maintenance activities the city developed a comprehensive but easy to use</p> <p>Guide for facilities managers of buildings renovated through ZagEE project. Facility managers were also involved as advisors during the planning process in order to receive maximum feedback from building users. This two-way communication was additionally reinforced with a series of capacity building events for facility managers that were held by City of Zagreb and REGEA's experts. Facility managers were trained to work with new RES/EE equipment and to identify warning signs that heating/cooling/lighting systems are operating inefficiently.</p>		
Performance indicators linked to the practice		
<ul style="list-style-type: none"> Number of households with improved energy labeling: 87 Number of households with improved energy consumption classification: 87 Number of households engaged in support programmes: 87 (%) Reduction of annual primary energy consumption in public buildings: 49% (kWh) Annual energy savings in households: 33.526 MWh/year (%) Reduction of the use of fossil fuels in the building sector: 8.390 tCO2/year Other: Generation of renewable energy: 290 Mwh/year 		
<p><u>Indicators above are related to other practices as well, specific allocation to this GP is not possible. Specific indicators are as follows:</u></p> <ul style="list-style-type: none"> Number of households engaged in support programmes: 87 (kWh) Annual energy savings in households: 3.300 Mwh/year thanks, in part, to better energy management. 		
Indicators of success linked to the practice:		
<p>In total, 57 building managers have been trained in 2015 and 2016 while thirty more will receive education in 2017. Good energy management of public buildings will presumably result in energy savings of about 10% (3.300 MWh/year).</p>		

GOOD PRACTICE FICHE		Region: Croatia
Evidence of success.		
Capacity building for facility managers has to be a mandatory follow up after the deep energy renovation has taken place. By improving levels of their knowledge and awareness significant energy savings can be achieved. Energy information system (EIS), implemented by the city will be used to monitor the effects of this capacity building and to ensure that buildings are being properly managed. Early warning system will be used to detect and minimize damage of system failures.		
Factors that might hamper the transfer:		
Guide for facilities managers is publicly available in Croatian. They can be downloaded freely but need translation.		
Time required to complete the BP	1 year	
Contact details to obtain further information on the practice		
Contact name	Mrs Melita Boric	
e-mail	melita.boric@zagreb.hr	
Organization	City of Zagreb	
Type of Organisation	local government (with status of region)	
Website	http://zagee.hr/ http://www.zagreb.hr/	

GOOD PRACTICE FICHE		Region: Croatia
Title of the good practice:	C9. Croskills: Lifelong training plan for building workers	
Partner region:	Croatia	
Location data	Country-wide	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> Professionalization of the construction sector 		
Description of the practice:		
<p>This GP is focused on the first component of the Croskills project, itself being part of the larger Build Up Skills initiative. Co-funded by the Intelligent Energy Europe programme of the European Union, Croskills is aimed at life-long education of workers in the field of energy efficiency in building thus strengthening qualifications of craftsmen, employed and unemployed construction workers.</p> <p>The project consists of 6 components:</p> <ol style="list-style-type: none"> 1. TRAINING PLAN 2. TRAIN THE TRAINERS 3. TEST-TRAININGS 4. CERTIFICATION 5. SUSTAINABILITY PLAN 6. INFO-CAMPAIGNS <p>From 2012-2013 the project gathered relevant Croatian institutions and professional associations in the construction, energy and education sectors through the National Qualification Platform, resulting in the formulation of needs and priorities within the National Roadmap and action plan, formally endorsed by 23 sectoral stakeholders.</p> <p>Croatia, with some exceptions in the institutional vocational education, has no systematic training of students and construction workers in energy efficiency, even though the number of construction workers far exceeds the number of other experts in the field of construction (engineers, etc.). There is also no certification scheme for workers or companies related to EE in buildings. Therefore, this component was focused on developing the training plan that includes curricula and training modules with accompanying teaching materials, in order to close the educational gap in the construction sector.</p> <p>A total of 18 training modules – three modules for each of the 6 key building professions - bricklayer, plasterer, carpenter, housepainter, roofer, drywall installer - have been developed in accordance with the Croatian Qualifications Framework (levels 2 and 3).</p> <p>Training plans include:</p> <ul style="list-style-type: none"> - permanent on-the-job training of qualified on-site workforce, - qualification of unqualified workers for on-site construction jobs; - pre-qualification of (un)employed construction workforce for other/additional on-site construction profiles, - certification of non-formal and informal learning outcomes - certification exam without a 		

GOOD PRACTICE FICHE

Region: Croatia

course taken.

FORMAT of the training curricula: Each of 18 training modules consists of 2-6 modules depending on the professions and EQF level, as a combination of theoretical lectures (at training centers) and practical work (full-scale models within the training centers and at locations of industrial partners). Special attention is given to the new construction products and technologies which are applied in the building of new and refurbishment of existing buildings, up to the NZEB standard.

DURATION: 10-40 hours, depending on EQF level and profession, on average 20 hours per each training course.

Currently ongoing is the development of demonstration tools:

- ✓ Full-scale models of building components/parts, available at training centers to ease the practical part of the training
- ✓ Short video-clips on key skills for each profession, illustrating in a simple way how to perform the most relevant tasks at the typical building sites
- ✓ Thermography cameras will be rented for real time demonstration of quality control of construction works and how it affects the energy efficiency of a building. The implementation of video content into lectures and e-learning (web tools for education, online educational resources, mobile learning, personal learning networks etc.) will simplify the understanding of presented topics.

Participative and collaborative approach through the National Platform and for the development of National Roadmap and Action Plan was essential

The training plan is targeting **6 priority building professions**.

Within the framework of Croskills 1200 workers are to be educated on EE in construction, 10 training centres are to be accredited and 200 trainers certified to deliver the training programmes.

An important aspect of this GP is to **raise awareness and attractiveness** of the 6 building professions.

Indicators involved: training plans for building workers, collaboration platforms incorporated, action plans developed.

Performance indicators linked to the practice

Evidence of success.

The development process for the **National Roadmap and Action Plan** was open for all interested parties, through national consultations and meetings with focus groups held during 2013 throughout the country, in order to ensure presence of the highest possible number of interested stakeholders.

The **National Platform** was involved in the process of developing the lifelong education schemes for building workers as advisory body and will continue in this capacity throughout the Croskills project.

Factors that might hamper the transfer: The main important factor in developing the training plan was the participative approach and support of main national stakeholders. Lack of collaboration and

GOOD PRACTICE FICHE		Region: Croatia
<p>agreement on priorities between those stakeholders would be a serious obstacle. A question of financing can arise later during the implementation of trainings as construction workers have limited amount of time and funds to spare for education – so a sustainable funding plan has to be in place.</p>		
Time required to complete the BP	18 months	
Contact details to obtain further information on the practice		
Contact name	Mrs. Ivana Banjad Pečur	
e-mail	croskills@croskills.hr	
Organization	Faculty of Civil Engineering, University of Zagreb	
Type of Organisation	Public educational institution	
Website	http://www.croskills.hr/en/	

GOOD PRACTICE FICHE		Region: Croatia
Title of the good practice:	C11. Bračak Energy Centre	
Partner region:	Croatia	
Location data	Bračak, City of Zabok, Krapina-Zagorje County	
Topic of the practice: Thematic coverage <ul style="list-style-type: none"> Professionalization of the construction sector Innovation 		
Description of the practice: <p>The reconstruction and revitalization of Bračak Manor is a unique example of energy rehabilitation of a historic building under cultural heritage protection focusing on two aspects: application of advanced technical solutions and repurposing of a public building.</p> <p>During history the Manor has changed its purpose twice, starting off as an aristocratic summer house in late 1800s and turning into a hospital after WWII. When in 2007 the hospital relocated the old Manor was emptied and in need of a revitalization. A collaboration between the estate owner, Krapina-Zagorje County, and REGEA led to the conceptualization of Bračak Energy Centre, a regional hub of excellence and knowledge in energy efficiency and renewable energy sources hosting a business incubator for promising start-up companies in the field of energy, a multi-purpose education and demonstration centre and offices of the regional development agency ZARA and the regional energy agency REGEA. A strong visual identity has been developed by REGEA to accompany the promotion of this innovative idea.</p> <p>The idea for the project started in 2011 when the General Hospital Zabok and REGEA signed an agreement on the use of the building. In 2013 Krapina-Zagorje County authorized REGEA to implement the reconstruction and revitalization of Bračak Manor. In 2015 funding was ensured and construction works began which are to be completed until the end of 2016.</p> <p>Full funding in the amount of €3,2 million for this project has been ensured through a government decision declaring Bračak Energy Centre a project of national importance for the environment, nature, energy efficiency and renewable energy sources. The funding institution is the Croatian Environmental Protection and Energy Efficiency Fund.</p> <p>Main technical features include:</p> <ul style="list-style-type: none"> ✓ Highly efficient biomass boiler using wood pellets (ETA up to 94,9%), ✓ Micro CHP for hot water and power production during summer period ✓ Air to water heat pump system for cooling and heating in transitional periods ✓ External wall insulation on the inside and energy efficient windows and doors (U<1,4 W/m2K) ✓ Highly efficient internal and external lighting systems (LED and FLUO T5) ✓ HVAC system (heating, ventilation and air conditioning) ✓ Advanced central monitoring and control system (heating, cooling, energy consumption) ✓ Rainwater harvesting system for irrigation of green areas and as wastewater treatment ✓ Electric vehicle charging station and purchase of one electric vehicle ✓ Comprehensive interior conservation works (decoration and replication) ✓ <i>Energy efficient appliances for offices and in-house restaurant</i> 		
Performance indicators linked to the practice <ul style="list-style-type: none"> Number of households with improved energy labelling: 1 Number of households with improved energy consumption classification: 1 Number of households engaged in support programmes: 1 (%) Reduction of annual primary energy consumption in public buildings: 70% for heating (kWh) Annual energy savings in households: N/D (%) Reduction of the use of fossil fuels in the building sector: N/D 		

GOOD PRACTICE FICHE

Region: Croatia

Indicators of success linked to the practice:

The complete reconstruction of the building will result in an upgrade from EPC rating E to rating B with the share of 88% of renewable energy sources. Energy rehabilitation will reduce energy consumption for heating by up to 70%, or from the initial 213,0 kWh/m² to 64,0 kWh/m².

The reconstruction and maintenance of green areas around the building will contribute to **safeguarding the natural** surroundings.

It is expected that at least **40 new jobs** will be generated while the reconstruction process itself has boosted the domestic construction sector and improved the **skills of workers and professionals**.

Evidence of success.

Besides the obvious impact the project has on the **environment and energy efficiency**, the application of cutting-edge technical solutions was the key to success: **innovation** has been both an answer to a challenge of carrying out energy rehabilitation of a historic building and the means to raising the bar for energy efficiency.

The project will improve the **quality of lives of local citizens** by creating new services, such as the educational centre, business incubator and local restaurant, which in turn will contribute to **employment and regional development**.

Overall, the project will **raise public awareness** on the efficient use of natural resources and the importance of sustainable development on a continuous basis.

Factors that might hamper the transfer:

Energy rehabilitation of a building under cultural protection can be very challenging if **requirements set by conservation officers** are very strict.

Reconstruction of a historic building in addition to the application of innovative materials and advanced technologies can be very costly, so an adequate **financing model** has to be in place

The reconstruction process can be hampered by **unskilled workers and professionals**, so a careful selection of project design, construction and supervisory services is essential

Cooperation between key stakeholders, such as the building owner, future user as well as other involved institutions is the basis for such a project to kick-start.

Time required to complete the BP

5 years (soft activities are continuous)

Contact details to obtain further information on the practice

Contact name	Dr. Sc. Julije Domac
e-mail	jdomac@regea.org
Organization	North-West Croatia Regional Energy Agency
Type of Organisation	Sectoral agency
Website	http://www.regea.org/

GOOD PRACTICE FICHE		Region Jämtland Härjedalen
Title of the good practice:	J8. Energy Efficiency Support (EES)	
Partner region:	Sweden	
Location data	Region Jämtland Härjedalen	
Topic of the practice: Thematic coverage <ul style="list-style-type: none"> • Professionalization of the construction sector • Innovation 		
Description of the practice: <p>To reach the desired two degrees target on CO2 emissions effect, Sweden will have to increase the energy efficiency by reducing 20% the energy consumption by 2020. To do so, the public sector should act as a model, which is why the Swedish Energy Agency offered an economic contribution between 2010 and 2014 to municipalities and county councils for increasing energy efficiency in their own premises</p> <p>The Energy Efficiency Support (EES) was part of a national program managed by the Swedish Energy Agency, which amounted to SEK 99 million (ca. 10M€) per year. The EES was available for municipalities and county councils that undertook to work actively with energy efficiency.</p> <p>Those who applied for the support undertook to:</p> <ul style="list-style-type: none"> – Establish a strategy for energy efficiency and actively work to implement this. The strategy should include a zero-position analysis, goals and an action plan. – Carry out at least two of the six actions described in Annex VI to the EU Energy Services Directive. This means, for example, buying energy-efficient products or renting / using energy-efficient buildings. – Annually report the effects of energy efficiency efforts to the Energy Agency. 		
Performance indicators linked to the practice <ul style="list-style-type: none"> ○ Energy consumption in public buildings reduced by on average 8% 2009-2014 ○ 		
Indicators of success linked to the practice: <p>Other positive effects are:</p> <ul style="list-style-type: none"> • Better indoor climate and behaviour. • Raising awareness on use of energy among public workers and citizens. • Exemplary role by the local public authorities. • Many municipalities stated that they ended up saving money through the work methods they had started, which is why many continued after the funding was exhausted. 		
Evidence of success. <p>The reduction in energy consumption can be attributed to that local government has prioritized energy issues higher than before.</p>		
Factors that might hamper the transfer:		
Time required to complete the BP		
Contact details to obtain further information on the practice		
Contact name	Swedish Energy Agency	

GOOD PRACTICE FICHE		Region Jämtland Härjedalen
e-mail	energikartlaggning@energimyndigheten.se	
Organization	Swedish Energy Agency	
Type of Organisation	Public energy agency	
Website	http://www.energimyndigheten.se/nrp/stod-for-energikartlaggning-i-sma-och-medelstora-foretag/	
Fiche completed on date:	September 2017	

GOOD PRACTICE FICHE		Region Jämtland Härjedalen
Title of the good practice:	J9. Education close to zero energy constructions: “Energy lift”	
Partner region:	Region Jämtland Härjedalen, Sweden	
Location data	Östersund, Jämtland County, Sweden	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> Professionalization of the construction sector 		
Description of the practice:		
<p>The zero energy housing rising awareness has pushed the construction industry to work against much more energy efficient house buildings. However, the sector needs expertise, knowledge and know-how in the energy field. To respond to these professional requirements, the Swedish Energy Agency developed a kit of education programs, aimed at different groups in the value chain. These programs are financed by the Agency.</p> <p>The Agency's competence enhancing efforts are aimed at clients, engineers, architects, construction project managers, consultants and technical managers. Energy Offices coordinate the education to disseminate knowledge about energy-efficient construction and renovation and raise awareness and knowledge regarding the forthcoming demand for near-zero energy buildings.</p>		
Project Background		
<p>This is an effort from the Swedish Energy Agency to prepare the construction sector for future requirements for near-zero energy buildings (NNE standard), which will be implemented gradually by 2021 in private buildings. In order to achieve Sweden's energy and climate goals, major efforts are made on energy efficiency and increased use of renewable energy. All new buildings must have very low energy consumption. At the same time, energy use in existing buildings must be drastically reduced. In order to promote low energy building, all actors in the construction industry are aware of the energy goals and understand how their work affects the performance of the building's energy performance.</p>		
Training		
<p>The education intends to provide a holistic view of the construction process linked to low energy building in terms of new production and renovation. The education curricula explains what differences involves building and renovating low energy buildings in comparison with conventional buildings. The Energy Agency's knowledge-enhancing efforts are seen as an increase in knowledge based on the fact that each occupational group in the target group has basic knowledge in property management, construction processes, construction and installation technology and the building's energy performance, but that a competence increase is needed in the construction of low energy houses or in the energy renovation of buildings.</p>		
Performance indicators linked to the practice		
<p>Total number of participants:</p> <ul style="list-style-type: none"> – 1643 people are registered on the web course. – 749 people have attended at least a seminar. – 352 people have completed their course certificate. 		
Indicators of success linked to the practice:		
<p>Through increased knowledge of low energy building in all stages of the construction process, work will start faster to build energy-efficiently.</p>		
Evidence of success.		
<p>People through all stages of the construction process have participated. Information and working methods are spreading. This will make it easier for us to reach the goal of close to zero energy housing 2019 resp. 2021.</p>		

GOOD PRACTICE FICHE		Region Jämtland Härjedalen
Factors that might hamper the transfer:		
What can prevent from a fast shift to energy efficiency building is traditions and habits. It does not look like a greater risk when so many have gone to education and general energy savings are on Sweden's agenda.		
Time required to complete the BP	Approximately 6 years, 2014 - 2020	
Contact details to obtain further information on the practice		
Contact name	Swedish Energy Agency	
e-mail	energikartlaggning@energimyndigheten.se	
Organization	Swedish Energy Agency	
Type of Organisation	Public energy agency	
Website	http://www.energimyndigheten.se/nrp/stod-for-energikartlaggning-i-sma-och-medelstora-foretag/	
Fiche completed on date:	September 2017	

GOOD PRACTICE FICHE		Region: Slovenia
Title of the good practice:	S6. Education "European Energy Manager - EUREM"	
Partner region:	Slovenia	
Location data	Slovenia	
Topic of the practice: Thematic coverage		
<ul style="list-style-type: none"> • Professionalization of the construction sector • Innovation 		
Description of the practice:		
<p>Education "European Energy Manager - EUREM", which was developed in Germany in 1997, but so far it has in its framework for efficient energy management, trained for more than 4,000 European energy managers, is intended for all who want to get a comprehensive overview of areas of activity energy manager and relevant skills for efficient management of energy, in particular persons responsible for the management of energy companies in both the public and private sector, building managers, plant managers and production and process engineers.</p> <p>In Slovenia was the first education EUREM organized within the project EUREM.NET in 2008. Previously it was conducted 8 trainings EUREM, which was successfully completed by 176 European energy managers.</p> <p>Slovenian energy managers with their project tasks very successful at European level. Within the regular annual conference of the European energy managers, our energy managers received several awards.</p> <p>Training, which lasts for 6 months, is organised at the Centre for Energy Efficiency Institute "Jozef Stefan", it focuses on the acquisition of skills for the implementation of energy efficiency measures that provide medium to high reduction in energy use and energy costs at a reasonable investment cost. Participants in the context of education trained to prepare the analysis of the energy situation of the company, technical and organizational preparation and management of energy efficiency projects as well as their appropriate presentation of the company management, assessment and provision of targeted savings and ensuring continuous improvement in the company.</p> <p>The training is usually held extra-occupational and consists of the three following elements: face-to-face teaching (160 teaching units, 45 min each), self-learning and energy concept (80 teaching units in total). During the courses the participants acquire the theoretical knowledge which they may then apply in the course of their projects for the first time in practice.</p>		
Performance indicators linked to the practice		
<ul style="list-style-type: none"> ○ (%) Reduction of annual primary energy consumption in public buildings ○ Number of households with improved energy consumption classification, ○ (%) Reduction of the use of fossil fuels in the building sector. ○ (kWh) Annual energy savings in households: 16.9 million kWh. 		
Indicators of success linked to the practice:		
<ul style="list-style-type: none"> ○ Reducing energy consumption with implementation of measures from their project tasks is estimated at 224,5 GWh, 16.9 million kWh annually. ○ Reducing CO₂ emissions for 123.3 kton per year. 		
Evidence of success.		
<ul style="list-style-type: none"> ○ Average saving potentials per EUREM project work ○ Energy-saving potential 750 MWh / year <ul style="list-style-type: none"> ○ Cost-saving potential 30,000 € / year 		

GOOD PRACTICE FICHE		Region: Slovenia
<ul style="list-style-type: none"> ○ CO2 reduction potential 200 t / year ○ Investment costs for measure 100.000 € ○ Payback period 3 - 4 years 		
<p>Factors that might hamper the transfer:</p> <ul style="list-style-type: none"> ○ Willingness of individuals and companies to participate in the program ○ Finding a right lecturer 		
Time required to complete the BP	6 months	
Contact details to obtain further information on the practice		
Contact name	Boris Sučić	
e-mail	boris.sucic@ijs.si	
Organization	Jožef Stefan Institute - Energy Efficiency Centre (EEC)	
Type of Organisation	Public/private, national	
Website	http://si.eurem.net/display/euremsi/EUREM	

GOOD PRACTICE FICHE	
Title of the good practice:	O3. Sustainable Campus- Green University
Region:	(Lisbon) Portugal
Location data	Universidade de Lisboa
Topic of the practice: Thematic coverage	
<ul style="list-style-type: none"> • Professionalization of the construction sector • New financial instruments 	
Description of the practice:	
<p>This is the largest project of decentralised energy production in the city of Lisbon, and it will allow this institution to attain patterns of energy efficiency and renewable energy use in line with the best practices of reference educational institutions around the world.</p> <p>This decentralised production of renewable energy is assured by four photovoltaic plants. The installation of the photovoltaic plants also promoted the energetic certification of some of the building in campus.</p> <p>With this, the University of Lisbon proceeded to energy audits where some improvement measures were identified, that would reduce the energy consumption.</p> <p>The plants were installed on the roofs of some buildings and also in parking and recreational areas, where they also function as shading structures.</p> <p>The energy produced will be sold and injected into the grid in its entirety, and the part of the revenue belonging to the University of Lisbon will be applied directly in the implementation of the energy efficiency measures identified in the audits.</p> <p>These plants only correspond to the first phase of the project. At the end it is expected to have an installed capacity of 2MW. In a next phase of this project it is intended to constitute a laboratory of energy efficiency knowledge, which will become a workspace and idea centre, taking advantage of this privileged location within the University.</p> <p>The project also includes the construction of a roof garden, populated by various botanical species, which connects two building at the University.</p>	
Performance indicators linked to the practice	
<ul style="list-style-type: none"> • (%) Reduction of annual primary energy consumption in public buildings • (%) Reduction of the use of fossil fuels in the building sector • (kWh) Annual energy savings in households: +1 million kWh 	
Indicators of success linked to the practice:	
<p>644 kW of Installed power which results in the production of 1.028.480 kWh/year.</p> <p>Reduction in emissions: 11.662 tons CO₂ during the lifetime of the panels.</p> <p>The roof garden has benefits ranging from the protection of the buildings, rainwater collection, carbon capture in the plants biomass.</p>	

GOOD PRACTICE FICHE

Evidence of success.

The construction of these plants involved the installation of 2.627 photovoltaic panels with an individual unit capacity of 245W, resulting in an installed potency of 644 kW and a connection potency of 556 kW.

Factors that might hamper the transfer:

- Lack of policy instruments that guarantee the purchase of photovoltaic energy
- Lack of trained professionals in energy audits
- Poor awareness on energy issues by University managers

Time required to complete the BP

Contact details to obtain further information on the practice

Contact name	Márcia Vila
e-mail	mvila@ul.pt
Organisation	Universidade de Lisboa
Type of Organisation	Public/private, regional/local government, etc
Website	www.ul.pt

GOOD PRACTICE FICHE	
Title of the good practice:	O4. Casaclima training course for artisans and small enterprises
Region:	Venice, Italy
Location data	Venice, Italy
Topic of the practice: Thematic coverage	
<ul style="list-style-type: none"> Professionalization of the construction sector 	
Description of the practice:	
<p>This good practice is about a training course devoted to artisans and small enterprises in Venezia region.</p> <p>The objective of the training was to increase the skills necessary to ensure the quality of the works performed in buildings to reach high energy efficiency.</p> <p>Topics covered include:</p> <ul style="list-style-type: none"> - Principles of physics and energy efficiency - Certification CasaClima and regulations related to building construction systems, materials and installation techniques of thermal insulation - Installation techniques of wall thermal insulation (coating systems) - Characteristics and installation of doors and windows - Materials and strategies for the air tightness of the building - Issues with moisture and steam, measurement techniques and testing - Installations in buildings with high efficiency (winter heating and summer conditioning, mechanical ventilation, plumbing systems, electrical systems, power generation from renewable sources, home automation system) - Sizing and equipment installation problems 	
Performance indicators linked to the practice	
<ul style="list-style-type: none"> Number of households with improved energy labelling Number of households with improved energy consumption classification Number of households engaged in support programmes (%) Reduction of annual primary energy consumption in public buildings (kWh) Annual energy savings in households Number of households with improved energy consumption classification (%) Reduction of the use of fossil fuels in the building sector 	
Indicators of success linked to the practice:	
<p>140 artisans and small enterprises attended this training during the year 2014, in several sessions organised during a period of 6 months.</p> <p>The course has been organised each year since then with a high success and impact in Venezia region.</p>	
Evidence of success.	
<p>Energy certifications in buildings arise as consequence of this training.</p> <p>The Chamber of Commerce in Venezia region registered an increase of energy professionals.</p>	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> ✓ Lack of professionals to give the training ✓ Lack of professionals to attend the training ✓ Poor energy awareness of citizens in general 	

GOOD PRACTICE FICHE	
Time required to complete the BP	
Contact details to obtain further information on the practice	
Contact name	
e-mail	info@ape.fvg.it
Organisation	APE – Agenzia per l'energia del Friuli Venezia Giulia
Type of Organisation	Local government
Website	www.ape.fvg.it

6 Benchmarking Fiches

Benchmarking Fiches are provided by BUILD2LC partners as a consequence of the learning and exchange of common experiences. Based on the effective exchange of Good Practices, partners were asked to identify which practices they are willing to adopt in their region.

A Benchmarking Fiche has been designed in the frame of the project to show the interest of the partner in adopting a specific Good Practice. Hence, partners are required to complete questions about main needs in their region (related to the topic) that the good practice will address, issues that could be improved in the region by adopting the good practice, problems that could arise when adopting or once adopted the good practice or policy instruments in place that could implement the good practice.

The good practices requested by the partners on this *Professionalization of Construction Sector* topic were:

- Reconstructed public buildings in City of Zagreb under the ZagEE project. Specific parts: *capacity building* and *Inducing change in behaviour through energy managers and end-users capacity building*.
- Technical Support & Promotion in Multi-Apartment Building Modernization (BETA Agency).
- Quality in Multi-Apartment Building Modernization.
- ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis.
- Bračak Energy Centre
- Target 2050.
- Link to Energy.
- Your Green Future.
- Young Energy People.
- Podkarpackie Academy Certification.

AEA from Andalusia region is interested in one good practice, *Reconstructed public buildings in City of Zagreb under the ZagEE project from Croatia* (on capacity building issues). The AEA states that the convergence of dedicated public funding, experience in managing funds, the alignment with the Andalusian policies and Operational Programme outlines and the existence of a Energy Management Network of the Andalusian Regional Government (REDEJA) as the tool designed to promote the principles of energy saving and diversification in the Andalusian Administration would make the adoption process a likely success, but there is a clear need of increasing competence among the workforce and the professional landscape.

As VIPA partner concerns, Lithuania did not find any good practice to be adopted on this topic this time.

The UK partner, SWEA from Gloucestershire region, has shown interest in adopting two good practices from Lithuania:

- In first place, SWEA is willing to adopt the Lithuanian good practice called: *Technical Support & Promotion in Multi-Apartment Building Modernization (BETA Agency)* to receive support on methods to engage citizens and getting details on the quality assurance processes regarding the financial incentives and retrofit led by the BETA Agency.
- Secondly, SWEA partner is interested in *Quality in Multi-Apartment Building Modernization* from Lithuania as well to develop further their “Link to Energy” installers network, which is well-established, to extend the training provision and quality assurance, further raising the profile of the network and the quality of installations. This way SWEA is willing to count on a greater pool of well-trained installers within the region.

The Polish partner, RRDA from Podkarpackie region shows interest to up to five good practices, most of them from Gloucestershire, UK.

- ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis
- Bračak Energy Centre
- Target 2050
- Link to Energy
- Your Green Future
- Inducing change in behavior through energy managers and end-users capacity building - ZagEE project (Croatia)

RRDA needs to reinforce the training and development of new energy advisors as well as municipal energy auditors and stimulate the job creation for people out of work. With this selection of good practices, Podkarpackie pursues the preparation of well-qualified independent energy advisors, increasing the available number of municipal energy auditors, generating this way new jobs in the green economy. Also this has positive benefits in the construction sector, as a lower energy consumption, good reputation and increased competitiveness. Also, Link to Energy would help to set a an internet search engine to find the installers that are most relevant to a particular social group.

The Croatian partner RGEA did not find any good practice to be adopted on this topic.

The Swedish partner, RJH, would like to incorporate in the Jämtland Härjedalen region:

- *Young Energy People* from Gloucestershire. RJH is particularly interested in how this project engages both youth, schools and companies at the same time

educating students in secondary school in energy management and renewable energy technologies. Most businesses in Jämtland are small and have few employees. These companies do not have the time or resources to focus on energy issues, although in many cases there are profitable energy efficiency measures.

- *Inducing change in behavior through energy managers and end-users capacity building - ZagEE project* from Croatia to develop and apply learning tools for building managers and users, so the entire energy efficiency potential can be utilized.

As Slovenia regards, LEAG is interested in:

- *Young Energy People* from Gloucestershire to reduce CO2 emissions through an excellent programme that supports the implementation of Sustainable Energy and Climate Action Plans in a way that the students will have better knowledge of Renewable Energy Sources and the Rational Use of Energy.
- *Podkarpackie Energy Certification* from Podkarpackie to increase the chances of employment for people over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from the construction sector.
- *Quality in Multi-Apartment Building Modernization* from VIPA for renovation of private multi-apartment buildings in municipalities that are in wider public interest.

BENCHMARKING FICHES FOR 'PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR'											
	ZagEE – capacity building (RGEA)	ZagEE – inducing change (RGEA)	Achieve (SWEA)	Target 2050 (SWEA)	Link to Energy (SWEA)	Your Green Future (SWEA)	BETA Agency (VIPA)	Quality in MABR (VIPA)	Young Energy People (SWEA)	Podkarpackie Energy Certification (RRDA)	Bračak Energy Centre (RGEA)
ANDALUSIA	X										
GLOUCESTER							X	X			
PODKARPACKIE		X	X	X	X	X					X
JÄMTLAND		X							X		
SLOVENIA								X	X	X	

BENCHMARKING FICHE Region: Andalusia

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Good practice to be adopted:

Andalusia: Reconstructed public buildings in City of Zagreb under the ZagEE project

Specific parts: Capacity Building

Main needs to respond to:

The existing public building stock of the Regional Administration of Andalusia (Junta de Andalucía) consists of around 4.800 buildings including hospitals, primary and secondary education schools, universities, retirement homes, sport facilities, general office buildings, etc. Only a tiny fraction of them are considered to be energy-efficient. It is noticeable the high potential for energy and economic savings that could be obtained in different public centres, in many cases over 40%.

The exemplary role of the public sector towards the development of future energy sustainable buildings is fundamental. In the context of transforming the public sector, public buildings renovation plays an important role. Most Andalusian public buildings are +30 years-older and, therefore, they are not harmonized with recent energy directives. They possess a high energy-saving potential which can be achieved through the implementation of technical solutions. Also, the efficiency of public services depends on workers' productivity which is directly affected by indoor comfort and air quality conditions.

For this reason, in 2007 was created *The Energy Management Network of the Andalusian Regional Government (REDEJA)*¹³ as the tool designed to promote the principles of energy saving and diversification in the Andalusian Administration, as well as implement renewable energies in their buildings. REDEJA, integrated into the Andalusian Energy Agency (AAE), manages the energy consumption of up to 62 regional public bodies, including the regional ministries and other 49 public entities. As a result, REDEJA conducted and accomplished several energy optimisation programs. However, and after ten years, the retrofitting and energy rehabilitation rate in Andalusian public buildings is still very low due to several existing barriers and, therefore, needs to be accelerated.

One of these barriers is the low collaboration power between public bodies, a key requirement that was fulfilled successfully by ZagEE and from which we can learn how. In addition, it is clear that the REDEJA optimisation and retrofitting projects are extremely dependant on public financing and lump sums subsidies. Most of them reach at least 80% ERDF co-financing, coming the rest of the investment budget from regional or national public sources. The private financing rate in these initiatives is simply zero, and there are nor ESCos involved neither a similar formula of energy securitization to manage the potential energy savings profits. No mention the use of financial vehicles to leverage the available public funds, totally absent. ZagEE tortuous financial path along the project life will help us to identify the different available choices. More innovative methods need to be explored. Therefore, we need to:

- To set a rigorous regional plan of public buildings rehabilitation and retrofitting that involves all the needed public bodies collaboration and estimates the financial requirements and needs to boost our current rehabilitation rate.
- To provide funding mechanisms which target the public sector. If we follow a similar project to ZagEE then any saving made could be directly managed by a third party and the financial burden could be securitized.

¹³ More info: <https://www.agenciaandaluzadelaenergia.es/en/redeja>

BENCHMARKING FICHE Region: Andalusia

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

- To increase the leverage of the existing public financing, either European either regional or national using financial vehicles. Up to now the leverage level is null.

Main objective to transfer the good practice to your region:

The ZagEE initiative was explained by our Croatian colleagues during the good practices exchange meeting in Zagreb, September 2016, where it raised a high interest on us. Andalusia, as the lead partner, detected among the rest of the partnership that ZagEE is very popular too, so we expect to have multi-lateral meeting in this case.

We would like to find out more about:

- Their experience with different and innovative financial mechanisms and how these worked alongside existing structures and mechanisms for the retrofitting of public buildings
- The application process to ELENA programme to cover technical spending.
- How the project was planned and developed.
- The development of the buildings stock register and the update of the energy audits.
- How the stakeholders were engaged, particularly how the public bodies were animated, enrolled or enforced to collaborate with each other.
- What were the challenges and how were these overcome?
- The capacity building for facility managers to develop and apply management and learning tools in order to improve energy management of newly renovated buildings.

Factors that might hamper the transfer:

- Funding sources and availability
- Engagement of stakeholders, particularly public bodies
- Complexity of technical preparation

Policy instrument:

The sustainable construction sector is one of the priorities of Smart Specialization Strategy (S3) of Andalusia. Its strategy in this field passes through the redefinition of sustainable construction in terms of energy rehabilitation of buildings, the physical, social, economical and environmental recovery of urban environments, the reuse of consolidated urban lands and the rehabilitation of cities. The opportunities are based on the development of new designs and materials for construction and the sustainable processes.

AAE has managed the public incentive programme of the Regional Government, *Andalucía A+*. Specifically, in the buildings sector, AAE launched in 2014 a *Programme to Promote Sustainable Construction*, an initiative which is a finalist in the Regio Stars Award 2015, and also has also coordinated a *Plan for Sustainable Construction, Horizon 2020 for the Regional Government*.

*** REDEJA is perfectly suitable to adopt this good practice**

First REDEJA's tasks were related to the specific, coordinated and effective management of the energy billing of the Andalusian Regional Government, which was highly fragmented and in

BENCHMARKING FICHE Region: Andalusia

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

many cases unknown. The optimisation of energy supply contracts¹⁴ and the unified management of the energy service allow for economies of larger scale and a greater efficiency in the coordination of the management of the supplies lowering this way the billing costs, though it does not help to save energy.

In addition, REDEJA works on public buildings energy audits¹⁵ in order to identify energy saving and efficiency measures and the possibility of implementing the use of renewable energy technologies. It offers advising¹⁶ to the adhered public entities in the contracting of energy supplies and the investments to be undertaken as a result of the audits, as well as in new construction projects to obtain the highest energy rating. For this reason, REDEJA also has a training line¹⁷ targeted to the public buildings energy and maintenance managers, aimed to reducing energy demand, the search for a greater rationality in the contracts and in the applicability and use of renewable energy technologies.

Regarding specific REDEJA retrofitting projects, we highlight:

* **Agreement between the Budget and Public Administration Regional Ministry and the Economy, Innovation, Science and Employment Regional Ministry** (holding the Andalusian Energy Agency as Technical Secretariat) to conduct the energy rehabilitation of three different administrative buildings⁶. Based on a 6,2 million Euros budget, coming totally from public authorities and with a +80% ERDF contribution, +428 toe and 357k€ are saved per year.

* **Agreement between the Andalusian Energy Agency and the Andalusian Health Service (Regional Public Health System)**¹⁸

Energy consumption to maintain the quality requirements in a hospital is very high, both to achieve the thermal levels that are needed in each area, as well as to guarantee the electricity supply necessary for the development of the different activities carried out 24 hours a day, 365 days a year. It is for this reason a few well-designed systems, with efficient technologies and a correct maintenance, are essential to ensure the service without increasing the energy bill of the centre.

It carries out energy saving and efficiency actions and the deployment of renewable energy sources in 14 public hospitals as:

- **Fuel shift from diesel to natural gas** in the boilers to produce hot water more efficiently and with lesser emissions, as well as the replacement of heating and air conditioning equipment of low performance by other more efficient systems.

¹⁴ More info <https://www.agenciaandaluzadelaenergia.es/en/redeja/services-offered-redeja/optimisation-energy-supply-contracts>

¹⁵ More info: <https://www.agenciaandaluzadelaenergia.es/en/redeja/services-offered-redeja/realisation-sectorial-studies-and-energy-audits>

¹⁶ More info: <https://www.agenciaandaluzadelaenergia.es/en/redeja/services-offered-redeja/advice-entities>

¹⁷ <https://www.agenciaandaluzadelaenergia.es/en/redeja/services-offered-redeja/training>

¹⁸ <https://www.agenciaandaluzadelaenergia.es/en/redeja/specific-projects/agreement-andalusian-health-service>

BENCHMARKING FICHE Region: Andalusia

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

- **Generation of power and heat of high performance**, covering up to 60% of the hot water, heating and cooling needs.
- **Renewable energy** for the production of hot water through solar thermal installations and use of biomass.

From 20.1 million Euros invested, 17.9 million comes from the Andalusian Energy Agency, most of them ERDF funding, and the remaining 2.2 million Euros were allocated by the Andalusian Health Service. 20 energy audits were previously conducted and estimated a total energy demand of 45.000 toe. The initiative saves 700 toe per year (1.570 ton CO₂) and 3.2 million Euros (simple pay-back period less than 7 years).

Existing financing funds:

The main finance policy instrument addressed is the **Andalusian Operational Programme for investments for jobs and growth, 2014 – 2020**, a Structural Funds operational programme (Objective T.O. 4. Priority Line 4.c: Support the Energy efficiency and use of renewable Energy in public infrastructure, including public buildings and housing to improve energy efficiency and increase the use of renewable energy for electricity production and thermal uses in buildings) whose objective is to improve energy efficiency and increase the use of renewable energy for electricity production and thermal uses in buildings. Regarding the public field, this programme is allowed to fund:

a) investments in public buildings of the Andalusian Regional Government and municipalities, prior audit and subsequent monitorization;

b) high quality energy audits.

In full collaboration with the managing authority of the Operational Programme, AEA will be responsible for the management of funds for energy in the new framework 2014-2020, including among its activities the definition of the regulatory bases of the support programmes, the selection of the projects, and the verification and follow-up. Equally, AEA is also actively involved in national ERDF monitoring committees, contributing to the adaptation and monitoring of the ERDF OP Andalusia for AEA.

AAE has managed the public incentive programme of the Regional Government, *Andalucía A+*. Specifically, in the buildings sector, AAE launched in 2014 a *Programme to Promote Sustainable Construction*. The incentive model used at present in Andalusia has been based on incentives aimed at stimulating the demand of energy projects. However, the new framework requires a reorientation of the previous model that together with energy saving and the reduction of emissions, allows better exploiting the opportunities of employment generation associated with energy rehabilitation and, this way, to obtain a greater leverage of public funding. This might be achieved by introducing new financing instrument that facilitate the development of energy efficiency projects, besides other additional measures.

Relevant stakeholders:

- **Andalusian Energy Agency** – to plan and coordinate and promote the objectives established. Collaboration with public administration in the design of planes and programmes and management of energy incentives.
- **The Energy Management Network of the Andalusian Regional Government (REDEJA)**

BENCHMARKING FICHE Region: Andalusia

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- **Directorate General of European Funds** - Operational Programme managing authority.
- **Andalusian Regional Government** – decision-making body.
- **The General Administration of Andalusia and other public bodies** – holding the potentially target public buildings.

Main beneficiaries:

- **Communities and taxpayers** – Savings made by the public sector are direct benefits for them.
- **The General Administration of Andalusia and other public bodies**– Improved building stock; financial savings which can be redirected into communities.
- **Public workers and citizen users** - will enjoy the benefits of an increased comfort and better cooling and heating conditions.
- **Businesses** – Dinamization of the sustainable building sector.

Further information:

We are interested to work with REGEA for a bi-lateral meeting to get more information.

BENCHMARKING FICHE Region: Gloucestershire	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Good practice to be adopted:	
Gloucestershire: Technical Support & Promotion in Multi-Apartment Building Modernization (BETA Agency)	
Main needs to respond to:	
The UK project is focused on ensuring there is citizen engagement, trust, and uptake of any initiatives. There is an absence of trust in financial incentives and retrofit in the UK as a result of issues related to the Green Deal and problems with the quality of installations (including cavity wall insulation and external cladding).	
Main objective to transfer the good practice to your region:	
We are interested in this good practice in particular as it provides support about: <ul style="list-style-type: none"> - Methods to engage citizens and lessons learned - Details about Quality Assurance processes (linked to another good practice we are interested in) 	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> - Being able to directly replicate QA processes or methods to engage citizens. It is likely that aspects will be taken and adapted. - The UK project does not focus on multi-apartment blocks so it will need to engage different tenure and building types. - The UK is not working on a national scale so adaptations will need to be made for more local/regional work. - Whether funding will directly support the work. 	
Policy instrument:	
We already have the Warm & Well programme and Link to Energy installers network. This GP will support both of these programmes but will also support some new actions which will be incorporated into the action plan surrounding: these actions involve specifically targeting 2 areas within the county and also training and QA processes.	
Existing financing funds:	
<p>There is some money available through the Warm and Well programme and potentially through funds for training and QA which we are in the process of securing.</p> <p>More funding, or pooling of funding, may be required to roll out larger scale programmes in target areas. Funding for this may be available through the Clinical Commissioning Group once details have been finalised.</p>	
Relevant stakeholders:	
<p>Gloucestershire Clinical Commissioning Group – Lead on engaging doctors and supporting collaboration and finance.</p> <p>Severn Wye – providing support through Warm & Well, facilitation, providing installers and possible</p>	

BENCHMARKING FICHE Region: Gloucestershire	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
training.	
SGS Berkeley GREEN – Training partners	
Registered Social Landlords – targeting tenants and planning and financing retrofit. Incorporating QA.	
National Landlords Association – targeting private landlords and tenants.	
Cheltenham and Gloucester Local Authorities – engagement potential financing support.	
Link to Energy Installers – providing installation work and using/developing QA.	
Energy suppliers – potential to target ECO funding	
Schools within the areas – engagement and education programme	
Community groups – engagement and education programme	
Main beneficiaries:	
Vulnerable householders – the targeted areas of Matson and Oakley are areas of high deprivation, therefore, the quality of life, financial situation, and health of residents should be positively impacted.	
Installers – improved skills and reputation. More work will improve the local economy.	
Social and Private Landlords - improved EPC ratings of buildings, training in procurement. Knowledge that work is at a high quality.	
Further information:	
We are keen to pursue a number of GPs from Lithuania so it would be helpful to set up a bi-lateral meeting in Lithuania.	

BENCHMARKING FICHE Region: Gloucestershire	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Gloucestershire: Quality in Multi-Apartment Building Modernization	
Main needs to respond to:	
<p>Severn Wye has the Link to Energy installers network which is well-established. If the project could develop further then it would be beneficial to extend the training provision and quality assurance, further raising the profile of the network and the quality of installations. Ideally, there would also be a greater pool of well-trained installers within the region.</p>	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> ○ The ensure quality assurance and positive feedback from customers ○ To expand the Link to Energy network ○ To further develop the skills of the Link to Energy installer 	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> ○ Financing additional activities, particularly for Link to Energy may be a challenge. ○ It is also important to engage installer hence it needs to be worthwhile for them. 	
Policy instrument:	
<p>Link to Energy and Warm & Well are already in existence and have some quality assurance checks and feedback mechanisms already in place.</p>	
Existing financing funds:	
<p>Link to Energy was financially totally incorporated into the Warm & Well scheme since April 2017 hence financing now comes from the Warm & Well budget. Any referral fees gathered (3% of the total cost of installations) are now paid into an enablement fund that will be used to provide assistance to vulnerable householders for getting measures installed.</p> <p>Additional funds may be required for any additional work conducted with the Link to Energy network.</p>	
Relevant stakeholders:	
<ul style="list-style-type: none"> ○ GREEN –There is potential for collaborative work regarding training of the Link to Energy group. ○ Link to Energy installers – The needs of the installers need to be established and there needs to be engagement and commitment from the group. ○ Local Enterprise Partnership (LEP) – GREEN is a priority area for the LEP and the LEP run a construction and energy group who may also be involved. Funding may be secured via the LEP for any additional training. 	
Main beneficiaries:	
<ul style="list-style-type: none"> ○ Residents would receive high quality installations and energy efficient homes ○ Installers would have a high level of skills, positive feedback and potentially more work ○ The region would have a supply of well-trained installers 	
Further information:	

BENCHMARKING FICHE Region: Gloucestershire

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

We would need to find out a little more information before deciding whether a full bi-lateral meeting was appropriate and whether we want to pursue the good practice further.

BENCHMARKING FICHE	
Best practice to be adopted:	
Podkarpackie: Bračak Energy Centre	
Main needs to respond to:	
<ul style="list-style-type: none"> • The need for minimizing of the negative buildings impact on the natural environment in the region • The need for taking actions against climate changing. • The need for reducing of the costs of the exploitation of buildings in region. • The need for respecting of international obligations that Poland has agreed to respect. 	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> • The need for creating an educational energy center that would practically allow to raise awareness, knowledge and skills about energy efficiency and renewable energy sources for the public and private sectors, a multifunctional education and demonstration center in the region • The need for showing onsite how modern equipment, materials, and ways of using of energy might reduce the costs of energy and improve the environment. 	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> • Problems with financing of some solutions – the most often more advanced and more effective solutions cost much more than those less effective ones. • Other legislations preventing the implementation of certain elements of good practice 	
Policy instrument:	
<ul style="list-style-type: none"> • Regional Operational Program of the Podkarpackie Region for the years 2014-2020; • Own funds of various Associations, Chambers of Commerce or clusters 	
Existing financing funds:	
<ul style="list-style-type: none"> • Regional Operational Program of the Podkarpackie Region for the years 2014-2020; • Own funds of various Associations, Chambers of Commerce or clusters 	
Relevant stakeholders:	
<ul style="list-style-type: none"> • Marshall Office of Podkarpackie Region • Podkarpackie Energy Agency • Chamber of Civil Engineers • Podkarpackie Renewable Energy Cluster 	
Main beneficiaries:	
<ul style="list-style-type: none"> • society • public institutions • construction companies • housing co-operatives • schools and universities • entrepreneurs 	
Further information:	

BENCHMARKING FICHE	
Not enough information at this moment.	
Contact details to obtain further information on the adoption of the good practice	
Contact name	Marek Duda
e-mail	mduda@rarr.rzeszow.pl
Organization	Rzeszow Regional Development Agency
Type of Organisation	Public regional government
Website	www.rarr.rzeszow.pl
Fiche completed on date:	30.10.2017

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Good practice to be adopted:	
Podkarpackie: ACHIEVE – Actions in low income Households to Improve Energy efficiency through Visits and Energy diagnosis	
Main needs to respond to:	
<ul style="list-style-type: none"> • Training and development of new energy advisors • Job creation for people out of work • Needs of free energy advice for citizens - individual, independent energy consulting and information education and awareness activities for the promotion of energy efficiency measures and renewable energy sources for citizens in the local environment • Needs of free tips and interviews assist in the selection, design and implementation of investment measures of energy efficiency and use of renewable energy sources in residential buildings. • Giving advices to the citizens, final customers of energy in the residential sector and offering free and commercially independent advices connected with training services • Needs of free helping in planning and implementation environmentally friendly investments in the region, helping in identification available sources of funding, organizing training and information and education activities to help prepare, verify and implement low carbon economy plans. • Needs of training of municipal energy auditors. • Needs of different forms of support tailored to specific needs of different groups: the form of informational meetings, consultations in the office and outside of the office, answers by email inquiries, phone counseling, training and information and promotion activities, individual counseling as well as conferences or webinars. 	
Main objective to transfer the good practice to your region:	
<ul style="list-style-type: none"> • Support in the planning and implementation of environmentally friendly investments in the region, • Increasing the quality of life and green jobs. • Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources, • Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emissions and RES through providing local and regional information exchange and good practices on the implementation of Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC • Facilitating the implementation of certain measures and programs related to energy policy, • Systematically combating pollution of the environment, energy poverty and dependency on energy imports, • Preparation of well-qualified independent energy advisors, • Promotion of low carbon economy, • Generating of new jobs in the economy - increasing the number of municipal energy auditors, • Facilitating access to EU and national funds for increasing energy efficiency and using of RES, • Citizens - lower energy costs, energy efficient investments can become a potential source of revenue, 	

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
<ul style="list-style-type: none"> • Business: lower energy consumption, positive image, increased competitiveness. 	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> • Problems with financing various activities for the comprehensive implementation of the model of "ACHIEVE". • Problems with financing energy auditors. • Problems with the interest of auditor services. • Problems with access to car to drive to clients. 	
Policy instrument:	
Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".	
Existing financing funds:	
<ul style="list-style-type: none"> • Regional Operational Program of the Podkarpackie Region for the years 2014-2020. • Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis "Reduction of emissivity of the economy". 	
Relevant stakeholders:	
<ul style="list-style-type: none"> • Marshall Office of Podkarpackie Region • Podkarpackie Energy Agency 	
Main beneficiaries:	
<ul style="list-style-type: none"> • public institutions, • students, • unympled people, • univercities, • civil society, • owners of buildings. 	
Further information:	
Too little information at this moment.	

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Good practice to be adopted:	
Podkarpackie: Target 2050	
Main needs to respond to:	
<ul style="list-style-type: none"> • On site surveys, advice and help with finance for measures to improve energy efficiency and promote renewables in community buildings. • Development of a targeted approach to achieving deep carbon cuts in existing homes • A need to increase the rate of retrofit in their properties in order to meet the 2050 carbon reduction targets. • Training and development of new energy advisors. • Needs of free energy advice for citizens - individual, independent energy consulting and information education and awareness activities for the promotion of energy efficiency measures and renewable energy sources for citizens in the local environment. • Needs of free tips and interviews assist in the selection, design and implementation of investment measures of energy efficiency and use of renewable energy sources in residential buildings. • Giving advices to the citizens, final customers of energy in the residential sector and offering free and commercially independent advices connected with training services. • Needs of free helping in planning and implementation environmentally friendly investments in the region, helping in identification available sources of funding, organizing training and information and education activities to help prepare, verify and implement low carbon economy plans. • Needs of training of municipal energy auditors. • Needs of different forms of support tailored to specific needs of different groups: the form of informational meetings, consultations in the office and outside of the office, answers by email inquiries, phone counseling, training and information and promotion activities, individual counseling as well as conferences or webinars. 	
Main objective to transfer the good practice to your region:	
<ul style="list-style-type: none"> • Providing an effective framework for significantly reducing carbon emissions for the domestic sector. • Providing a significant range of examples of how existing technologies might be used to achieve deep carbon cuts in existing homes, while preserving built heritage and character. • Stimulating the local market for sustainable energy retrofit. • Alleviate fuel poverty by 'future-proofing' local homes. • Support in the planning and implementation of environmentally friendly investments in the region. • Increasing the quality of life and green jobs. • Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources, • Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emissions and RES through providing local and regional information exchange and good practices on the implementation of Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC • Facilitating the implementation of certain measures and programs related to energy policy, • Systematically combating pollution of the environment, energy poverty and dependency on 	

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
	<p>energy imports,</p> <ul style="list-style-type: none"> • Preparation of well-qualified independent energy advisors, • Promotion of low carbon economy, • Generating of new jobs in the economy - increasing the number of municipal energy auditors, • Facilitating access to EU and national funds for increasing energy efficiency and using of RES, • Citizens - lower energy costs, energy efficient investments can become a potential source of revenue, • Business: lower energy consumption, positive image, increased competitiveness.
Factors that might hamper the transfer:	<ul style="list-style-type: none"> • Problems with financing various activities for the comprehensive implementation of the model of "Target2050" • tailored to the practical realities of the existing building stock and its complexity and imperfections • finding reputable installers • negotiating with planners, with regard to heritage buildings • cooperation with the private sector • availability of capital
Policy instrument:	
	Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".
Existing financing funds:	
	<ul style="list-style-type: none"> • Regional Operational Program of the Podkarpackie Region for the years 2014-2020. • Infrastructure and Environment Operational Program for the years 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".
Relevant stakeholders:	
	<ul style="list-style-type: none"> • Installers • SMEs • public institutions • domestic, business and communities users • Insulation and heating product manufacturers • Podkarpackie Chamber of Civil Engineers • Universities • National Fund for Environmental Protection and Water Management • Regional Fund for Environmental Protection and Water Management in Rzeszow
Main beneficiaries:	
	<ul style="list-style-type: none"> • public institutions • entrepreneurs planning to increase energy efficiency or the use of renewable energy sources in their facilities, especially those representing small and medium-sized enterprises • community and housing co-operatives • universities • civil society • domestic, business and communities users • Insulation and heating product manufacturers

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Podkarpackie: Link to Energy	
Main needs to respond to:	
<p>Our region:</p> <ul style="list-style-type: none"> - needs more holistic approach in delivering project funded energy efficiency improvements to householders, businesses and communities in the region, so as to ensure the maximum take up of installed measures. - needs an internet search engine to find the installers that are most relevant to a particular social group. This will allow customers to contact those installers who can meet their criteria. You will also be able to read or download sample surveys of local companies that have already made energy improvements. - installer network database will allow domestic, business and community customers to obtain quotations from installer members, and ultimately have improvement measures installed. 	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> • Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources, • Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emission and RES through providing local and regional information exchange and good practices on the implementation of the Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC • Facilitating the implementation of certain measures and programs related to energy policy, • Systematically combating pollution of the environment, energy poverty and dependency on energy imports, • Preparation of well-qualified independent energy advisors, • Promotion of low carbon economy, • Generating of new jobs in the economy - increasing the number of municipal energy auditors, • Facilitating access to EU and national funds for increasing energy efficiency and using of RES, • Citizens - lower energy costs, energy efficient investments can become a potential source of revenue, • Business: lower energy consumption, positive image, increased competitiveness, • Support in the planning and implementation of environmentally friendly investments in the region, • Increasing of the quality of life and green jobs. 	

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Factors that might hamper the transfer:	
	<ul style="list-style-type: none"> ○ Problems with financing various activities for the comprehensive implementation of the model of Link to Energy. ○ Cooperation with interested registered installer members– lack of agreement or lack of willingness to participate in the project. ○ Shortage of qualified registered installers
Policy instrument:	
	Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".
Existing financing funds:	
	<ul style="list-style-type: none"> – Regional Fund for Environmental Protection and Water Management in Rzeszow – Regional Operational Program of the Podkarpackie Region 2014-2020. – Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".
Relevant stakeholders:	
	<ul style="list-style-type: none"> – National Fund for Environmental Protection and Water Management – Regional Fund for Environmental Protection and Water Management in Rzeszow – Marshall Office of Podkarpackie Region – Podkarpackie Energy Agency
Main beneficiaries:	
	<ul style="list-style-type: none"> – Installers – SMEs – public institutions – domestic, business and communities users – Insulation and heating product manufacturers – Podkarpackie Chamber of Civil Engineers – Universities.
Further information:	
	Too little information at this moment.

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Podkarpackie: Your Green Future	
Main needs to respond to:	
<p>Our region needs:</p> <ul style="list-style-type: none"> - sustainability events aimed at engaging secondary school students on the role of sustainability in the innovation, retail, energy, construction and waste and how their careers might help to develop a low carbon in the future - raise awareness - cooperation with schools - Bottom-up initiatives - Learn through fun, interactive workshops - Cooperation of authorities and universities 	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> • Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources, • Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emission and RES through providing local and regional information exchange and good practices on the implementation of the Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC • Facilitating the implementation of certain measures and programs related to energy policy, • Systematically combating pollution of the environment, energy poverty and dependency on energy imports, • Preparation of well-qualified independent energy advisors, • Promotion of low carbon economy, • Generating of new jobs in the economy - increasing the number of municipal energy auditors, • Facilitating access to EU and national funds for increasing energy efficiency and using of RES, • Citizens - lower energy costs, energy efficient investments can become a potential source of revenue, • Business: lower energy consumption, positive image, increased competitiveness, • Support in the planning and implementation of environmentally friendly investments in the region, • Increasing of the quality of life and green jobs. 	
Factors that might hamper the transfer:	

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
<ul style="list-style-type: none"> ○ Problems with financing various activities for the comprehensive implementation of the model of Your Green Energy ○ Cooperation with interested secondary school students and schools – lack of agreement or lack of willingness to participate in the project. ○ Shortage of qualified teachers 	
Policy instrument:	
Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".	
Existing financing funds:	
<ul style="list-style-type: none"> ➤ Regional Operational Program of the Podkarpackie Region 2014-2020: 4 priority axis the quality of education and competence in the region ➤ Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy". 	
Relevant stakeholders:	Please detail the relevant stakeholders involved and the role they could have in the implementation of the practice
<ul style="list-style-type: none"> – National Fund for Environmental Protection and Water Management – Regional Fund for Environmental Protection and Water Management in Rzeszow – Marshall Office of Podkarpackie Region – Podkarpackie Energy Agency – Schools and Universities – teachers and students 	
Main beneficiaries:	Please indicate the main target groups that will benefit from the adoption of the best practice
<ul style="list-style-type: none"> – Schools and Universities – teachers and students – SMEs – public institutions – Podkarpackie Chamber of Civil Engineers – Associations 	
Further information:	Please indicate if you may need further information on the practice. Do you have any query or doubt? Do you need a bilateral meeting to complete the information?
Too little information at this moment.	

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Podkarpackie: Inducing change in behavior through energy managers and end-users capacity building - ZagEE project	
Main needs to respond to:	
<ul style="list-style-type: none"> - to develop and apply management and learning tools for use by building managers and users in order to improve energy management of newly renovated buildings - awareness raise - cooperation with building managers among planning process - bottom-up initiatives - cooperation of authorities and building managers - guide for facilities managers. 	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> • Environmental benefits such as reducing pollutant emissions, improving air quality and reducing the use of non-renewable natural resources, • Increasing energy awareness of citizens, energy savings and reduction of greenhouse gas emissions and RES through providing local and regional information exchange and good practices on the implementation of the Directive 2010/31 / EU, 2012/27 / EC and 2009/28 / EC and Directive 2008/50 / EC • Facilitating the implementation of certain measures and programs related to energy policy, • Systematically combating pollution of the environment, energy poverty and dependency on energy imports, • Preparation of well-qualified independent energy advisors, • Promotion of low carbon economy, • Generating of new jobs in the economy - increasing the number of municipal energy auditors, • Facilitating access to EU and national funds for increasing energy efficiency and using of RES, • Citizens - lower energy costs, energy efficient investments can become a potential source of revenue, • Business: lower energy consumption, positive image, increased competitiveness, • Support in the planning and implementation of environmentally friendly investments in the region, • Increasing of the quality of life and green jobs. 	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> ○ Problems with financing various activities for the comprehensive implementation of the 	

BENCHMARKING FICHE Region: Podkarpackie	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
	<p>Croatian model.</p> <ul style="list-style-type: none"> ○ Cooperation with interested facilities managers– lack of agreement or lack of willingness to participate in the project. ○ Shortage of qualified facilities managers.
Policy instrument:	
	<p>Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".</p>
Existing financing funds:	
	<ul style="list-style-type: none"> • Regional Operational Program of the Podkarpackie Region 2014-2020. • Infrastructure and Environment Operational Program 2014-2020 within the Priority Axis "Reduction of emissivity of the economy".
Relevant stakeholders:	
	<ul style="list-style-type: none"> – Podkarpackie Chamber of Construction Engineers – National Fund for Environmental Protection and Water Management – Regional Fund for Environmental Protection and Water Management in Rzeszow – Marshall Office of Podkarpackie Region – Podkarpackie Energy Agency – Schools and Universities
Main beneficiaries:	
	<ul style="list-style-type: none"> – Property Owners Association – facilities managers – Schools and Universities – SMEs – public institutions – Podkarpackie Chamber of Civil Engineers – Associations – construction companies
Further information:	
	<p>Too little information at this moment.</p>

BENCHMARKING FICHE Region: Jämtland Härjedalen	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Jämtland-Härjedalen: Young Energy People	
<ul style="list-style-type: none"> - The project aims to educate students in secondary school in energy management and renewable energy technologies. Jämtland Härjedalen is particularly interested in how this project engages both youth, schools and companies at the same time. 	
Main needs to respond to:	
<ul style="list-style-type: none"> - There is a lack of regional initiatives that aim to increase knowledge about energy and climate issues among young people. - Most businesses in Jämtland are small and have few employees. These companies do not have the time or resources to focus on energy issues, although in many cases there are profitable energy efficiency measures. 	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> - The main objective is to increase the likelihood that young people choose to work with energy-related issues in the real estate industry or construction sector. - The objective is also to inspire young people to live a sustainable lifestyle where they strive for a low carbon footprint. - Help schools identify and implement energy efficiency measures. - Help companies with energy management so that they can reduce their costs and strengthen their competitiveness. 	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> - Schools do not have the opportunity to integrate the project into current education plans - School teachers have hectic schedules and may not prioritize participation in the project - No project funding. 	
Policy instrument:	
<ul style="list-style-type: none"> - As of now there is no policy in place. 	
Existing financing funds:	
<ul style="list-style-type: none"> - As of now there are no existing funds for implementation of this project. 	
Relevant stakeholders:	
<ul style="list-style-type: none"> - Public and private schools - Municipalities - SME's - Labour office 	
Main beneficiaries:	
<ul style="list-style-type: none"> - Schools and businesses since they receive help with energy management. - Both companies and public actors benefit from potentially more young people choosing to work with energy issues. 	

BENCHMARKING FICHE Region: Jämtland Härjedalen

TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR

Further information:

- We want more detailed information on the project, for example how much time is needed for implementation, experiences from recruiting the schools.
- A **bi-lateral meeting** was held on the 12th of June, 2017.

BENCHMARKING FICHE Region: Jämtland Härjedalen	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Jämtland-Härjedalen: Inducing change in behaviour through energy managers and end-users capacity building - ZagEE project	
Main needs to respond to:	
Building managers and end-users lack knowledge and do not adapt to new conditions after renovations.	
Main objective to transfer the best practice to your region:	
By developing an and applying learning tools for building managers and users, the entire energy efficiency potential can be utilized.	
Factors that might hamper the transfer:	
<ul style="list-style-type: none"> - The guide that has already been developed in Zagreb cannot be directly transferred to our nordic conditions - If it requires a lot of resources to develop guides and tools that are customized for nordic conditions - If it's hard to develop a single guide that can be used in different types of buildings. 	
Policy instrument:	
<ul style="list-style-type: none"> - As of now there is no policy in place. 	
Existing financing funds:	
<ul style="list-style-type: none"> - As of now there are no existing funds for implementation of this practice. 	
Relevant stakeholders:	
<ul style="list-style-type: none"> - Public institutions - Public real estate companies - Private real estate companies 	
Main beneficiaries:	
<ul style="list-style-type: none"> - Public and private real estate owners. 	
Further information:	
<ul style="list-style-type: none"> - We want more detailed information on the project, for example the scope of the guides, implementation plan, resources needed. - At a later time we may need a bilateral meeting to work out the specifics. 	

BENCHMARKING FICHE Region: Slovenia	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Slovenia: Young Energy People	
Main needs to respond to:	
Municipalities will have one more tool to achieve goals set in Sustainable Energy and Climate Action Plans in form of reduction of CO ₂ emissions and raising public awareness.	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> • Reduction of CO₂ emissions. • Excellent programme that support implementation of Sustainable Energy and Climate Action Plans. • Students will have better knowledge of Renewable Energy Sources and the Rational Use of Energy. 	
Factors that might hamper the transfer:	
<p>Factors that may hamper the transfer are similar to the UK:</p> <ul style="list-style-type: none"> • The degree to which the project activities can be incorporated into the existing curriculum. • The amount of time that teachers are able to dedicate to the project • The level of support from school senior managers. • The presence (or otherwise) of a keen member of staff. 	
Policy instrument:	
Municipalities that signed Covenant of Mayors initiative have obligation to reduce CO ₂ emissions of public building thru Sustainable Energy and Climate Action Plans. Therefore, the support for these kinds of activities is in place since the primary schools are funded by Municipalities.	
Existing financing funds:	
<ul style="list-style-type: none"> • In the form of person/teacher by schools/municipalities. • In the form of professional energy advices and supervision by energy manager of municipality or responsible Local Energy Agency. 	
Relevant stakeholders:	
<ul style="list-style-type: none"> • Municipalities – support for the programme • Schools – implementation of activities • Local Energy Agencies – professional support 	
Main beneficiaries:	
<ul style="list-style-type: none"> • Municipalities in form of reduction of CO₂ emissions and savings. • Students with improved knowledge on field of Renewable Energy Sources and the Rational Use of Energy. 	
Further information:	
In implementation phase we could use more information. No bi-lateral meeting is needed , since we will have project presented at Project conference.	

BENCHMARKING FICHE Region: Slovenia	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Good practice to be adopted:	
Slovenia: Quality in multi-apartment building modernization	
Main needs to respond to:	
Restoration of private multi apartment buildings in Municipalities that are in wider public interest. Financial gap for Slovenian RES and RUE projection for the period 2015-2020 (mil EUR) is:	
<ul style="list-style-type: none"> Restoration of private buildings 645 - 783 	
Main objective to transfer the good practice to your region:	
<p>In Slovenia these kinds of projects are supported by Eco Fund, Slovenian Environmental Public Fund, but there is space to improve investments into private multi apartment buildings, promotion of good practices and consequently quality of work.</p> <p>Possibility to gain additional know how that would help Slovenian Eco Fund:</p> <ul style="list-style-type: none"> construction companies could be required to provide insurance, that they can perform works in accordance to the contract, construction companies could be pre-checked before public procurement process, construction works could be supervised by independent and certified specialists, complaint system (there is no complaint system in place in Slovenia), state territorial planning and construction inspectorate, good examples of implemented projects could be promoted in the media. 	
Factors that might hamper the transfer:	
Eco Fund is overloaded with ongoing work, reviewing applications for subsidies, and therefore is not interested into having additional tasks.	
Policy instrument:	
Policy system is already in place but with possibility to implement even better quality improvement cycle.	
Existing financing funds:	

BENCHMARKING FICHE Region: Slovenia	
TOPIC: PROFESSIONALIZATION OF THE CONSTRUCTION SECTOR	
Best practice to be adopted:	
Slovenia: Podkarpackie Academy Certification	
Main needs to respond to:	
<ul style="list-style-type: none"> • Greater chances of employment for people over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from construction sector. • Update information for people that does not follow latest trend on energy renovation. 	
Main objective to transfer the best practice to your region:	
<ul style="list-style-type: none"> • Raising professional skills of workers over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from construction sector. • Implementing new technologies and better quality of work on energy renovations. 	
Factors that might hamper the transfer:	
Main barrier could be lack of interest from authorities for these kinds of activities and projects.	
Policy instrument:	
Policy instruments for education of unemployed or risk group of people are in place. Not directly for these kind activities but it could be proposed / negotiated.	
Existing financing funds:	
<p>Funds and programmes are already in place, with no similar topic in place. There are two possibilities and for each of them there are different requirements:</p> <ul style="list-style-type: none"> • The public tender for the acquisition of basic and occupational competences from 2016 to 2019 link (we could get in talks with Ministry to prepare right kind of program for next period. Programme is for 50+ years old) • National Vocational Qualifications link (If there is a need on a market for these kind of qualification, NVQ could be prepared with help of Public University Kranj) 	
Relevant stakeholders:	
<ul style="list-style-type: none"> • Ministry of Education, Science and Sport link • Public University Kranj link 	
Main beneficiaries:	
<ul style="list-style-type: none"> • People over 50 years with building qualifications, unemployed people or people of high risk of unemployment with knowledge from construction sector. • Companies with better skilled employees. • Companies and households that will get better quality of work done on energy renovations. 	
Further information:	
Bilateral meeting with Podkarpackie Energy Agency in Rzeszów and Slovenian representatives from Ministry of Education and Public University Kranj would greatly improve chances of success.	

7 Conclusions

The Interregional Thematic Seminar “Professionalization of the Construction Sector” took place in Rzeszow on 21 March 2017. The project’s Seminar was a big success with more than 70 attendances, a packed programme of noteworthy panelists from across Europe and effective discussion during networking/dynamic session.

The all-day conference provides very interesting and important conclusions. Currently, whole Europe needs high quality building and construction sector. There are many challenges that can be solved only by highly qualified experts.

It is clear that we need Clean Energy for All Europeans, so we should a focus on:

- Building smartness – European Commission proposed building automation and monitoring replacing inspections.
- New Smartness Indicator: building able to manage itself, interact with building occupants and contribute to grid operation.
- E-mobility: Recharging points in non-residential buildings and pre-cabing of residential buildings.
- Creation of market demand for building energy management through IT products.

Construction sector skills challenges: slight shortage of building workers by 2020 in most European countries; the need for training of the current workforce is much stronger than the estimated need for additional workers; more than 3 million workers would require up-skilling on energy efficiency or renewable energy sources by 2020; importance of transferable and cross-trade knowledge and skills.

Seminar participants had the opportunity to listen the most significant practices concerning improving skills of construction sector in projects partners’ countries.

Audience and speakers agreed that if we want to live in “clear world” we need to work together, step by step, and the basis is the awareness of the people. Speakers stressed the importance e-learning and ICT tools. It allows to increase the knowledge of the workers of the building sector in a more effective and a cheaper way.

Conclusions dynamic session are homework for public institution, clusters, companies:

- ✓ Inventorying the value chain to foster cauterization.
- ✓ Providing technical assistance and organizing workshops.
- ✓ Boosting development of rehabilitation sector and create new products and services.
- ✓ Between companies - holding together companies and stimulating joint growth.
- ✓ Publicity and visibility campaign to spread energy efficiency issues and raising awareness about innovations in renewable energies in order to help SMEs/clusters to compete with the “old school market”.

The main points to consider when addressing this challenge:

- National differences impact on the required skills and therefore necessary training provision.
- Work needs to address all of the technical and social and human aspects.
- How transferrable are qualifications, curriculum, roll out routes etc.
- Which learners do we aim at and how do we accommodate their needs and the needs of employers in order to make training programmes accessible.

The role of the BUILD2LC project in this process is to exchange experience and practical knowledge on improving the qualifications of professionals in the construction industry. The BUILD2LC project will make it much easier for you to experience each other and use good practices from the different project partners.

8 Appendices

Appendix 8.1 Seminar Agenda

Appendix 8.2 Participant regional stakeholder fiches

Appendix 8.3 Seminar presentations - *all the presentations are available at the BUILD2LC project website using the following link:*

<https://www.interregeurope.eu/build2lc/library/>

Appendix 8.1: Seminar Agenda

BUILD2LC PROJECT

Interregional Thematic Seminar – Professionalization of the Construction Sector

Rzeszów, Poland 20-22 March 2017

DAY 1 – 21 MARCH

PLENARY SESSION

VENUE: HOTEL RZESZÓW

aleja Józefa Piłsudskiego 44, 35-001 Rzeszów, Poland. T: +48 17 777 10 11

I – REGISTRATION AND WELCOME

8:30 – 9:00 Registration & Welcome Coffee

9:00 Opening and Welcome by the Authorities + Project brief presentation

II – PROFESSIONALISATION OF THE EUROPEAN CONSTRUCTION SECTOR

09:30 Professionalisation of the Construction Sector from the European Energy Efficiency Perspective. *Agata Kotkowska, Head of Buildings and Heating/Cooling Sector. H2020 Energy Unit. EASME (European Commission).*

10:00 Cooperation of universities and public and private sector in the frame of construction clusters – challenges, objectives, benefits. *Włodzimierz Grochal, Swietokrzysko-Podkarpacki Energy Cluster.*

10:30 Croskills: Lifelong training plan for building workers. *Diana Horvat, Head of department, Sector for Energy Efficiency in the Buildings Sector. Ministry of Construction and Physical Planning, Croatia.*

11:00 *Coffee break.*

III - PANEL ON GOOD PRACTICES OF PROFESSIONALISATION OF THE CONSTRUCTION SECTOR

- 11:30 The Podkarpackie Low-Energy Consumption Technologies Transfer Centre's Passive House. *Anna Pasierb, Podkarpacka District Chamber of Civil Engineers.*
- 11:50 Thermo-modernization of historic buildings within the old town of the city of Przemyśl. *Bogusław Kotek, Association of Owners and Managers Homes in Przemyśl.*
- 12:10 Cross-sectoral cooperation for raising qualifications of clusters and associations members. *Katarzyna Kowalska, Podkarpacki Renewable Energy Cluster.*
- 12:30 Examples of successful BUILD UP Skills projects. *Agata Kotkowska, Head of Buildings and Heating/Cooling Sector. H2020 Energy Unit. EASME (European Commission).*
- 12:50 Professionalisation of skills: Comprehensive improvement of qualifications of civil engineers. *Paweł Chmura, Podkarpacka District Chamber of Civil Engineers.*
- 13:10 Q&A and discussion

LUNCH

13:30 – 14:45 Cocktail lunch

IV – PITCHING SESSION

14:45 Pitching session for clusters and associations / round table

This session is intended to initial cooperation and opportunities identification among clusters, associations and other entities.

V – DYNAMIC SESSION and B2B MEETINGS

15:30 -17:00 Dynamic Session – Technical Committee

This session will foster the interchange of opportunities among the attendants and the contribution to the BUILD2LC project objectives.

Coffee available during the session.

17:00 -18:30 B2B meetings

Any cluster, association or other entity interested in increasing cooperation activities will have chance to hold bilateral meetings during this session.

18:30 ***End of first day meeting***

BUILD2LC PROJECT

Interregional Thematic Seminar – Professionalization of the Construction Sector

Rzeszów, Poland 20-22 March 2017

DAY 2 – 22 MARCH

- STUDY VISITS -

09:15 *Travelling by bus to University of Law and Public Administration (Rzeszów).*

Study visit I:

Comprehensive use of renewable energy sources.

<http://m.wspia.eu/en/about-slpa/basic-information-about-slpa>

(More at the good practice fiche).

10:45 *Travelling by bus to Podkarpackie Science and Technology Park (Jasionka)*

11:00 *Coffee break.*

11:30 **Study visit II:**

Company ML SYSTEM – R&D Photovoltaic Research and Development Center

ML System manufactures BIPV cells and modules.

More at: <http://mlsystem.pl/?lang=en>

13:30 **Lunch.**

- Conclusions and end of the interregional seminar -

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Appendix 8.2: Stakeholder Fiches

The following profiles for the visiting international stakeholders to the Seminar summarise the organisations attending, alongside the experience, expertise and areas of interest of the representatives.



ML SYSTEM S.A.

Podkarpackie / Rzeszów, Poland

Brief description

ML System S.A. is a private owned company, established in 2007. Over the years the company has grown from a three-person start-up to a market leader in its field. We have one of the biggest R&D Photovoltaics Centers in Poland, production facility of over 10.000sq m and more than 100 highly qualified employees.

Purposes and objectives

Our mission is to establish a new trend in the field of photovoltaics. We constantly strive to develop new and innovative products. ML System is the only company in its industry in Poland that has been carrying out advanced research into the properties of prototype PVs and novel PV materials.

We aim to become one of the leading BIPV manufacturers in Europe and in the world.

Knowledge, expertise, products and services

The portfolio of our BIPV products include: ventilated facades, sunshades, skylights, carports, lamps and small architecture forms. We assist our customers from the initial stage of a project through its completion. The range of our services includes initial design, manufacturing, implementation and monitoring of the performance of the system.

Areas of interest in interregional European collaboration

We wish to collaborate with other European stakeholders in the following areas:

- Scientific work in the fields of photovoltaics, nanotechnology and material engineering
- Promotion of sustainable and energy efficient buildings and renewable solar energy
- Improving energy efficiency of new and existing buildings



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Institute of Good Ecosolutions "Alternative" Ltd.

IDEA

Podkarpackie / Rzeszów, Poland

Brief description

IDEA is a consultancy agency specializing in energy, especially in the context of renewables and energy efficiency, climate change, environment. We also support our clients, both public and private in finding external financing for their projects. The company is a member of international CESBA association promoting energy efficiency in buildings.

Purposes and objectives

Our mission is economic growth and benefits for all our partners and customers through support for development of a more sustainable world.

Knowledge, expertise, products and services

- We develop energy plans, SEAPs, environmental policies, strategies and other policy documents – both for local and regional authorities.
- We advise on energy efficiency issues, assist in public procurements for energy media (e.g. electricity, natural gas), climate change, environmental impacts of an investment or strategy document to environment.
- We prepare expertises on energy efficiency, climate change and other issues.
- We also provide trainings on energy efficiency, environmental and climate issues and RES.
- We prepare energy audits of buildings.
- We assist our clients (public and private) in finding external funding for their projects and we apply for them. We provide also assistance in implementation phase of the project and later on appropriate monitoring.
- Thanks to our contacts throughout Europe we can find partners for projects that our clients are searching for.
- We are flexible and therefore we can adjust to specific needs and expectations of our customers in the field of our expertise.

Areas of interest in interregional European collaboration

We search for partners in projects where we could bring our knowledge of Polish conditions in the field of our expertise.

We also will gladly represent foreign institutions on Polish market where we can also do market research or find partners.

Most of all we are open to new business challenges. Sky is the limit!

□



Piotr Pawelec

President, CEO

European Commission's External
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Energy Cluster *Prešov Region*
EKPK

Central Europe /*Prešov, Slovakia*



Brief description

About the nature and scope of your organization (public/private, number of affiliates/companies/members, etc.)

*Energy Cluster of **Prešov** region is a voluntary interest association of legal entities with the site of action in the **Prešov** Region. It acts as a partner institution in Diversifications energy dependence in the region with the support of technology oriented companies. The aim is to ensure competitiveness of the region making the best use of natural resources. The cluster consists of five founding members and about three dozen partners from the private and public sectors.*

Purposes and objectives

Let us know about your mission, role and reasons to be.

EKPK priority focus is the use of renewable energy with the respect to the environmental requirements of the region and energy efficiency. The aim of EKPK is among other things also to propose a way of managing energy that will affect a particular entity in order to achieve the prescribed result in the consumption of energy. The cluster also began to carry out research activities in the field of the use of aerogels in increasing the energy efficiency of buildings.

Knowledge, expertise, products and services

What are you good at? What could you offer to Europe?

The studies from various fields eg. increasing energy efficiency in public buildings, the analysis of the usage of EPC, PPP and ESCO models within the operation of buildings, and the protection of cultural heritage monuments. Training and consulting in the field of energetics. The cluster provides the building of energy management in the business sector, including the energy process management.

Areas of interest in interregional European collaboration

Please, list the areas you prefer to collaborate with other European actors.

Environment and energetics, renewable energy sources, energy efficiency in buildings, implementation of innovative technologies.



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Director of organization

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Cluster of Sustainable Building of Andalusia

ClusterCSA

Andalusia / Granada, Spain

Brief description

The cluster, born in 2014, is a public-private association that aims to promote innovation and business collaboration of the construction sector.

We gather more than 70 companies, a cypher that keeps rising every month. Our associates business fields are:

- Real Estate
- Engineering & Architecture
- Landscaping
- Environmental consultancy
- Geology and geotechnics
- Contractor
- Energy management
- Facilities installing: electricity, plumbing, windowing, IT, heating and cooling, energy efficiency, and renewable energies

Purposes and objectives

Mission:

To gather in a collaborative space all the public-private agents of all along the Construction value chain, to increase competitiveness and the reconversion of the sector to sustainable business, through innovation and the application of techniques based on sustainability.

Goals:

- Define and lead the strategic discourse in sustainable construction
- Promoting changes towards sustainable construction in the sector
- Promoting business innovation
- Lobby
- Exchange of experiences
- Boost the public-private collaboration

Knowledge, expertise, products and services

Project consortium, capacity building, R&D facilitation, internationalization and dissemination.

Areas of interest in interregional European collaboration



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ClusterCSA

@ClusterCSA

We are looking for partner and project to develop activities on

- Civil engineering: railways, water treatment, roads maintenance
- Building: urbanism, rehab, Passivhaus, new sustainable materials
- Industrial: ecodesign, installing, landscape integration
- Energy efficiency: management systems, self-consumption, carbon footprint)



Brief description

Region Jämtland Härjedalen is a public organization and consists of two administrations; health and regional development. The organization as a whole has around 4,000 employees and the administration of regional development where I belong has about 160 employees. Regional development works with a diverse number of topics; education, energy and environment, social welfare, infrastructure and few strategies to name a few.

Purposes and objectives

I am responsible for the regional Competence platform in Jämtland Härjedalen. The Competence platform is a government commission aimed to build an effective and well maintained platform where the labor market and education collaborate to uphold a high, and matching, level of competence in the region.

The regional role is mostly to initiate dialogs and to obtain statistics and a knowledge base that the dialogs can be based on. We act as a process lead so that the dialogs ends up in actions for the stakeholders.

Knowledge, expertise, products and services

Process management and strategic competence development. Collaboration in the multi-level governance.

How to work in a structured way with industry collaboration in a region and municipalities.

Areas of interest in interregional European collaboration

How to support the regional labour market with skills transfer, e.g. in the energy sector.

How to work with the companies in the region so that they will see the need for competence development when it comes to energy saving.



Elin Nirjens

Competence strategist

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Euro-Inversia

Mazowieckie / Warsaw / Poland

Brief description

EURO-INVERSIA is a multidisciplinary private consulting company located in Warsaw (Poland) that support the internationalization of SMEs, R&D institutions, clusters and regions.

Purposes and objectives

EURO-INVERSIA is aimed at facilitating international cooperation (especially between Spain and Poland) focusing on export promotion, introducing Spanish entities to Polish market and viceversa, as well as implementing international EU funded projects in field of knowledge transfer, innovations and cross-cluster cooperation.

Knowledge, expertise, products and services

EURO-INVERSIA is based on solid knowledge, practical experience and unique expertise acquired during the last 13 years of operating in the Polish market and fruitfully coordinating Spanish-Polish cooperation. We introduced foreign European partners (specially clusters) to projects all over Poland and implemented various projects together with private sector, public bodies and other stakeholders financed by EU funds.

Areas of interest in interregional European collaboration

EURO-INVERSIA is involved in several cluster and innovation enhancement activities in sectors such as:

- renewable energies;
- smart cities;
- bio-economy;
- aerospace;
- machinery and metal

Areas of interest in interregional European collaboration

- internationalization of SMEs, universities and clusters into Polish market;
- grant funding prospects for EU projects 2014-2020 implemented Poland;
- providing reliable partners (SMEs, universities, chamber of commerce, local governments, etc.) and articulating cooperation between Polish and European entities;
- joining consortia for UE international projects (including H2020);
- cross-clusters cooperation in terms of creation new products and services for its members (including internationalization);



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FADECO CONTRACTORS
FADECO CONTRATISTAS
Andalusia, Spain

Brief description

FADECO CONTRATISTAS is a nonprofit organization and business organization that groups companies from the Construction Industry in Andalusia, provided they have legal personality and full capacity to act in this regional area through their 8 provincial associations and federations.

Purposes and objectives

Representation of their members, **promotion** of unity and business integration and **defense** of private enterprise, the market economy and the general and common interests of construction companies in Andalusia.

FADECO CONTRATISTAS follows the principles of transparency, participation, independence and institutional collaboration.

- **Reports** on its developed work to its governing bodies.
- **Involves** its members and the companies themselves in the actions carried out, receiving and endorsing the proposals and suggestions received from them.
- **Acts** with absolute independence from any person or entity, whether public or private. This is not incompatible with the needed and required institutional collaboration with public authorities and other economic and social agents.

FADECO CONTRATISTAS is member to the main territorial and inter-sectorial construction organizations of Andalusia, Spain and Europe.

Knowledge, expertise, products and services

- **to warranty** the competitiveness of enterprises in equality and free competition.
- **to ensure** legal certainty.
- **to encourage** private initiative.

This requires that companies in the sector will get / be provided with:

- Full access to permanent and updated **information**.
- Expert and skilled **advice**.
- **Services** under preferential conditions, so that they can take decisions and adopt strategies with greater agility at every moment.
- Ad-hoc services on training plans, occupational H&S, public calls tender coordination.
- Help to **internationalization**.



Jorge Fernández-Portillo

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Areas of interest in interregional European collaboration

- Role of the business organizations in the different models of '**social conciliation**': ¿What participation do have the economic and social agents of our European partners in the production and later execution of initiatives within this frame?
- **Professionalization** of the Construction Sector and experiences in education (Dual vocational training, for example) both for workers and for businessmen and women.
- **Models of financing**: major knowledge and access to instruments of financing in the EU . Especially for projects in the Energy Rehabilitation in Buildings and Sustainable Construction, in general, but in the matter of Infrastructures too.
- In the bosom of the **future cluster**, accompanied by the knowledge agents, it is very interesting to debate and know many experiences of current use of **new materials and products** by the companies, as well as the implantation of new processes from **I+D+i** and the use of **new technologies**.
- Incorporation of **R&D&i in SMEs**.
- Improving the knowledge of the running of European institutions in everything concerned to Construction Industry.

Other remarkable initiatives:

- **Model of dialogue with Trade Unions**, as a general rule, but also in a very concrete and particular way over the so-called **Labour Foundation of the Construction (FLC)**, which has allowed a permanent understanding and minimal conflict in such important issues as: occupational H&S, collective bargaining, regulation of subcontracting, etc.

The FLC itself is a fully exportable model. It has a philosophy and a structure that is perfectly lined up with all the aims that are chased in the area of the sustainable construction. As an example, FLC has headed the **Build up Skills** initiative in Spain, which was devised in order to boost continuing or further education and training of craftsmen and other on-site construction workers and systems installers, also addressing skills in relation to Energy Efficiency and Renewable Energy.

Other running initiatives:

- **OTC - Technological Observatory of Construction** (otc-andalucia.com)
- **LRb - Rehabilitation Line** (lineaderehabilitacion.com)
- **EPC Tracker software**



The Ministry of Environment of the Republic of Lithuania

Vilnius, Lithuania

Brief description

The Ministry of Environment is the main managing authority of the Government of the Republic of Lithuania which forms the country's state policy of environmental protection, forestry, utilization of natural resources, geology and hydrometeorology, **territorial planning, construction**, provision of residents with utilities, as well as coordinates its implementation.

Purposes and objectives

The goals of the Ministry of Environment and its subordinate institutions are as follows:

- To implement the principle of sustainable development;
- To set preconditions for rational utilization, protection and restoration of natural resources;
- To ensure provision of information about the state of environment and its forecasts to the public;
- To create conditions for the development of construction business;
- To ensure a proper environmental quality, taking into account the norms and standards of the European Union.

Knowledge, expertise, products and services

Buildings are responsible for at least 40% of energy use in most countries. Lithuania has launched a new ambitious Renovation program model for Multi-apartment buildings in 2013 and has achieved the best results. The President of European Investment Bank, Werner Hoyer, identifies the Lithuanian program as a success story. The Program is aimed to increase energy efficiency in multi-apartment buildings and monitoring results show that 50-80 % energy savings are reached.

The main idea of the new and clear model is to strengthen the municipalities' role with the goal – no financial and administrative burden on Households. The Government of the Republic of Lithuania has developed an innovative financing scheme (JESSICA Holding Fund) for this Program. More than €500 million have been provided from JESSICA for the energy efficiency projects. The overall aim of the scheme is to contribute to increased energy efficiency in housing sector by the means offering the long term loan financing at preferential terms and conditions.

This helps to create new jobs, lower CO2 emissions, meanwhile allowing thousands of people improve living conditions and cut energy bills.

New financial instrument created in 2016

The Lithuanian Leveraged Fund, a guarantee scheme funded with €100 million of EU Structural and Investment Funds and national resources, comes in support of



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energy efficiency investments to cut energy bills in thousands of Lithuanian homes. The structure will maximise the funds available for the “Multi-apartment Building Modernisation Programme”, a key government priority with national and municipal backing.

Areas of interest in interregional European collaboration

- To develop policies for innovative technologies and financial instruments in Energy efficiency field.
- To encourage the use of ICT to implement innovative solutions for energy efficient buildings.
- To create methodologies of smart and sustainable of energy efficiency in buildings solutions.
- Enable city residents to understand the development of smart sustainable cities
- To create Public- Private Partnership Network.
- Enable smart governance using bottom up and top down initiatives.



**GREEN BUILDING COUNCIL
SLOVENIA**

GBC SLOVENIA

Slovenia/Ljubljana, Slovenia

Brief description

GBC Slovenia is non-profit organization with main objective to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.

GBC Slovenia is member of global organization World Green Building Council with more than 70 member organizations, all with same constitution.

GBC Slovenia is covering Slovenian market of sustainable construction and has recently 41 members.

Purposes and objectives

Green Building Council Slovenia wants its efforts and work to contribute to the development of sustainable construction and sustainable development and management of real estate. It wants to establish a platform for interdisciplinary communication between industry, development, education, designers, developers and managers to improve the quality of residential and business premises and workplaces.

Knowledge, expertise, products and services

To establish a longterm sustainable construction, the principle activities of GBC Slovenia are education, international cooperation with similar institutions, establishing professional criteria, building databases, exchange of good practices, communication with interested stakeholders, advocacy, influence on the government at important professional decisions and exchange of views on government initiatives.

GBC Slovenia is part of World Green Building Council, a global organization with main mission of transforming the places we live, work, play, heal and learn.

GBC Slovenia is gathering its interests inside European Regional Network World GBC - a community of 27 Green Building Councils, 8 Regional Partner companies, and over 5,000 members across Europe. We take action - championing local and European leadership, and empowering our community to drive change. Together, we are greater than the sum of our parts, and commit to green buildings for everyone, everywhere.



Irena Hlede

CEO

Contact

Irena Hlede

Green Building Council
Slovenia

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GBC Slovenia

@GBCSlovenia

Areas of interest in interregional European collaboration

GBC Slovenia closely cooperates with ERN and World GBC with aim to transform together the European market through the following activities:

1. **Networking Leaders:** We support active networking of our members and sharing of best practices.
2. **Certification:** We lead the market by defining sustainable building practices and driving uptake of these through certification tools.
3. **Awareness Raising:** We stimulate demand by communicating the value of sustainable building to hundreds of thousands of people across Europe: industry, politicians and the public.
4. **Skills & Capacity Building:** We support supply by educating [over 10,000] people each year, to develop the skills and capacities to deliver and maintain sustainable buildings
5. **Financial & Economic Incentives:** We help the market scale-up by supporting the design of financial and economic incentives for sustainable buildings.
6. **Policy & Regulation:** We mainstream sustainable building by supporting public authorities with policy design and delivery and advocating ambitious policy goals.



Ministry of Construction and Physical Planning
Zagreb, Croatia

Brief description

The Ministry of Construction and Physical Planning performs administrative and other tasks related to construction, physical planning and housing, and participates in the development and implementation of programmes from European Union funds and other forms of international assistance in these fields.

Purposes and objectives

The Ministry performs administrative and other tasks related to: physical planning in the Republic of Croatia and coordination of regional physical development; planning, use and protection of space; international cooperation in physical planning; physical planning inspectional tasks; spatial information system; monitoring of the status of space and implementation of physical planning documents of the Republic of Croatia; location permits; cooperation in development of physical planning documents of counties, cities and municipalities in order to ensure requirements for management, protection and administration of space, and coordination of activities of state administration bodies participating in the development, adoption and implementation of physical planning documents; ensuring requirements for development and improvement of operation of legal and natural persons in the field of physical planning; settlement planning and regulation of building land use.

Also, regarding the establishment of requirements for designing and construction of construction works; building and use permits; use, maintenance and removal of construction works; building inspection tasks.

The Ministry performs administrative and other tasks related to the effects of economic policy instruments and measures on the development of design services in construction and on construction services; operation of legal and natural persons in the field of construction, the Croatian Chamber of Architects and Engineers in Construction and other engineers involved in construction; monitoring and analyzing the quality of construction and design services in construction; housing, housing policy; apartment and settlement construction; implementation of special housing programmes of the Government of the Republic of Croatia; policy, monitoring and improvement of the status in utility management, international cooperation in construction and housing.

Also tasks related to the participation of the Republic of Croatia in the work of bodies of the European Union in the fields of the Ministry's responsibility.

Knowledge, expertise, products and services

Energy renovation of buildings

Significant financial savings are achieved by energy renovation of buildings, that is, by increase in energy efficiency. Energy audit implementation is the first step in the energy renovation of buildings.

The term „energy renovation“ implies, among other things, increasing the heat



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I am working as Head of Department on Jobs related with Authorization for energy audits, preparation of regulations, implementation of regulations in the field of construction, in particular related to energy efficiency in buildings.

retention of the external building envelope, replacement of outer window and door frames and replacement or upgrading of the heating system. In the renovation, measures of use of renewable energy sources and adjustment of internal lighting as well as the implementation of a central management system for heating and cooling can also be included.

Energy-efficient houses provide a higher standard of living, while by renovation based on principles of energy efficiency savings on overhead expenses from 30 to 60 percent can be achieved. Eventually, reduction of energy consumption, especially of fossil fuels, leads to a reduction of carbon dioxide emissions, which means less environmental pollution, and thus a better protection of public health.

Areas of interest in interregional European collaboration

Energy certification of buildings

On the date of entry to the European Union the obligation commenced of issuing energy certificates for existing buildings or self-contained building units that are being sold, and as of 01 January 2016 there is the obligation of obtaining energy certificates also for buildings that are rented out or leased and have a total useful floor area of more than 50 m², or are a separate part of a building that has a total useful floor area of more than 50 m², regardless of the floor area of that particular part.

For those properties for which rent or lease contracts were concluded before 01 January 2016, energy certificates are not obligatory until the expire of the respective contractual obligations. Likewise, renting in this context shall not apply to the tourist activity, therefore providers of accommodation services in holiday flats, apartments and houses are not obliged to obtain energy certificates.

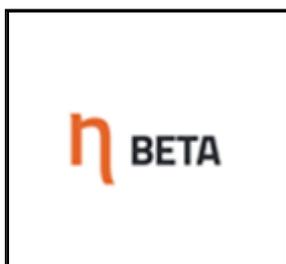
An energy certificate is a document that is valid for 10 years, and establishes the energy class of a building, indicates the energy performance of a building and provides information on the level of energy consumption, as well as on the condition of the building with regard to energy efficiency. The energy certificate provides also a proposal of cost-effective measures to improve the energy performance of the building in order to reduce energy consumption.

Energy certification of buildings shall be performed by persons who have the authorization from the Ministry of Construction and Physical Planning.

The Ministry has prepared a "Draft Ordinance on the system of training and certification of construction workers who built the building sections that affect the energy efficiency of buildings" which is on public consultation until March 22, 2017. The Ordinance defines the system of training and certification of construction workers incorporating parts of the building that affect the energy efficiency of buildings.

CROSKILLS Program is a program of continuous training of construction workers in the area of energy efficiency was created on the basis of "National Guidelines for the ongoing training of construction workers in energy efficiency," European initiative "Build Up Skills' and joint action of the professional public through the" National qualification platform "to strengthen skills construction workers in the area of energy efficiency.

CROSKILLS program consists of theoretical and practical training.



Housing energy efficiency agency

BETA

Lithuania, Vilnius

Brief description

Public institution Housing energy efficiency agency (BETA) was established by the Ministry of environment in Lithuania to administrate National program for modernization of the multifamily buildings. BETA now has much more functions.

BETA has 10 branch offices in Lithuania, with average 50 people working.

Purposes and objectives

Public institution Housing energy efficiency agency (BETA) was established in Lithuania to administrate National program for modernization of the multifamily buildings. Because of the capacity in the building refurbishment, BETA was obligated to administrate National program for the modernization of the public buildings (belonging to the municipalities).

In 2015 BETA, together with partners from Germany started a new project "Energy efficient renewal of urban areas in Lithuania". In acquaintance with the project "Energy efficient renewal of urban areas in Lithuania" the government of Lithuania prepared and approved legislation for quarter energy efficiency programs in municipalities. According the legislation BETA is a consultant for preparing and implementing the quarter energy efficiency programs. Now we are also responsible for searching of innovative projects for nature conservation in Lithuania.

BETA is always looking for any new projects which could improve energy efficiency in buildings or quarters. We have contacts with all 60 municipalities in Lithuania. All the municipalities trust BETA as their partner in the concept of energy efficiency, and they are willing to reach higher energy efficiency standards together.

Knowledge, expertise, products and services

BETA has huge capacity working on energy efficiency projects in buildings. This capacity is being used for further projects, to search for innovative solutions on how to save energy not only in buildings but in hole country/area. This capacity we are using in Lithuania and also by helping our partners in other countries.

With every new projects we are getting more and more experience – this is always being shared with our partners, not only by telling them how to do and work, but also by offering to implement real projects. Because of the trust our partners has about BETA, they are usually very interested about the proposals. All the capacity we have built and the knowledge we have collected during the years will be shared with our new or existing partners.

Areas of interest in interregional European collaboration

BETA would like to work on or to get more knowledge about energy efficient renewal projects, these projects could be orientated to old or new buildings, engineering infrastructure and other infrastructure where there are energy loses. Also, we are interested in a new technology which allows to save energy.



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Andalusian Cluster of Renewable Energies and Energy Efficiency - CLANER

Andalusia, Spain

Brief description

The business cluster CLANER is a non-profit association representing more than 90% of the renewable sector in the region, counting on around 100 members.

Purposes and objectives

CLANER is an alliance of companies, official bodies, research centers, universities and foundations, among others.

It represents and support the Andalusian renewable energies and energy efficiency sector interests through the encouragement and promotion of research, technological development and innovation of products, processes and services linked to, as well as fostering the cooperation among its members in order to increase competitiveness.

Knowledge, expertise, products and services

Our cluster represents 90% of renewable producers in Andalusia, one of the most important regions regarding renewable energy in Spain and Europe.

We provide an Excellence network for engineering, planning, assistance, training, maintenance and supply in the field of renewable energy and energy efficiency.

Among our members there are companies, official bodies, research centers, universities and foundations that have huge expertise in: wind, photovoltaics, solar thermoelectric, blue energy, biomass energy and energy efficiency.

Having such a broad scope among our members entails us to participate in different projects of different areas.

Our services:

- *Protection and representation: support to the sector, public liaison, public administration relations.*
- *Research, development and innovation management services.*
- *Consultancy: advice on collaboration and cooperation opportunities, grants, commerce and internationalization.*
- *Financing: fund raising to set up and improve products and services.*
- *Business opportunities, training, networking and dissemination.*

Areas of interest in interregional European collaboration

The cluster is very active in interregional collaboration. We are open to collaborate in projects in the framework of the EU (H2020, Interreg, etc.), as well as in different projects where we can that can contribute with our expertise to bring added value to our members.



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Subcarpathian Renewable Energy Cluster

PKEO Cluster

Podkarpackie / Rzeszów / Poland

Brief description

Subcarpathian Renewable Energy Cluster (PKEO) is a network of 83 partners that gathers entrepreneurs (mostly SMEs), Rzeszów universities, business support institutions and local governments representing renewable energies, smart cities, energy efficiency and connected sectors. Created in 2012, the cluster is focused on SMEs development and R&D activities which contribute to the development of innovative products and solutions.

Purposes and objectives

To stimulate cross-sectoral development of new technologies and innovative products related to sustainable use of renewable energies and smart cities solutions based on joint competences of cluster members. PKEO's actions also aim at creating a strong and uniform representation of the interests of entrepreneurs, investors and research and development units working for the development of environmentally friendly power industry based on renewable energy sources.

Knowledge, expertise, products and services

Knowledge & expertise:

1. expertise in eco-energy, smart cities and sustainable development;
2. strong and influential network of Polish and international partners;
3. access to modern R&D infrastructure and technologies;
4. experience in international cooperation (especially with Spain, Slovakia and Ukraine) in field of renewable energies;
5. strong network of business contacts

Cluster products:

1. PKEO Intelligent Eco Office 2020
2. E-commerce platform (www.energia24.rzeszow.pl)
3. PKEO Intelligent Eco-Housing 2020

Areas of interest in interregional European collaboration

1. Joint international projects (EU) in field of smart energy, smart cities, IoT, new materials, energy efficiency and bioeconomy
2. Living lab international projects in fields mentioned above
3. Experiences and knowledge exchange (including Erasmus+)
4. International R&D projects



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Katarzyna Kowalska

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UNIMOS Foundation

UNIMOS

Podkarpackie / Rzeszów / Poland

Brief description

UNIMOS is a cross-sectoral organization focused on building trust-based partnerships that foster growth, innovations and international development.

Purposes and objectives

We unite people and organizations from between business, science, administration and clusters on cross-sectoral level, creating a reliable network of trusted partners that grow together at international level.

Knowledge, expertise, products and services

UNIMOS is based on solid knowledge, practical experience and unique expertise from a wide variety of sectors that we have been collecting for the last 15+ years having worked in Latin America, Europe, Caucasus and Asia.

- **INTERNATIONALIZATION:** We inspire and help business, science, clusters and regions to become global
- **INTERCLUSTERING:** We foster effective cross-cluster cooperation regionally and across borders
- **INNOVATIONS:** We accelerate creation and commercialization of new and added-value services and products

Our key product is UNIMOS GLOBAL ALLIANCE - cross-sectoral & international alliance aimed at supporting and guiding business, science, public administration and clusters to work, cooperate & grow together at international level, with trusted partners and in inspiring, safe and effective environment.

Areas of interest in interregional European collaboration

Please, list the areas you prefer to collaborate with other European actors.

1. Internationalization of SMEs through cluster/network cooperation and joint programmes and projects
2. Cross-sectoral cooperation (especially renewable energies, smart cities, bioeconomy, health, agrofood and lifescience)
3. Transfer and adaptation of good practices from Spain to Poland
4. Innovations, creation of new, joint products based on common



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competences and aligned to social needs & challenges



Agency of European Innovations - AEI
Lviv, Ukraine

Brief description

Agency of European Innovations (AEI) is a non-profit, research organization aimed to increase cooperation between Ukraine and EU in ICT, Renewable Energy, Agricultural, Food, Health R&D areas within HORIZON2020, ENI and others EU-programmes. AEI acts as Innovation Bridge between science, business and authorities.

Geographic scope: all regions of Ukraine, but the main activities are carried out in the Lviv region. Leading experts from Ukraine that have an experience in 6FP and 7FP projects fulfilment are members of the Agency of European Innovations.



Ivan Kulchytsky
President

Purposes and objectives

The organization's mission is to support the professional development of domestic intellectual capacity to reform the economy and social life of Ukraine in accordance with the best European and international standards. We also focused on the formation of democratic values and civil society by implementation of scientific, educational, awareness raising and innovation activities.

The main aim of AEI is development in Ukraine the areas of ICT, Renewable Energy, Agricultural, Food, Health R&D.

Knowledge, expertise, products and services

- AEI positions itself as an information and consulting centre on the implementation of SME innovative projects.
- AEI is a Western Regional Contact Point of Scientific-Technical Cooperation with EU and National Contact Point of ICT&SME of Ukraine.
- AEI has developed network of contacts with innovative SMEs and leading R&D&I organizations in Ukraine and Europe.
- Experience in organising cooperation building (networking, twinning events and meetings) as well as awareness raising events (info-days, dissemination conferences).
- Experience in projects under the FP6 and FP7; the program «Polish Aid» Ministry of Foreign Affairs of Poland; Science and Technology Days of Poland-East; International Forum for Innovative Technology for Medicine IT MED; CBC programme «Poland-Belarus-Ukraine».
- AEI also provides research, analytical and advisory services to state and local authorities on the development of tools to support SMEs at national and regional levels. Our organization is actively involved in the discussion of Digital Agenda for Ukraine.
- AEI successfully implemented the cross border project FARADAY: “Creating permanent mechanisms for transfrontier cooperation in the area of RES” <http://www.pl-by-ua.rescluster.eu/> **Error! Referencia de**

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- AEI initiated the creation and chairs the Cluster of energy efficiency and renewable energy of Lviv region. The members of the cluster are companies engaged in renewable energy and energy efficiency.
- AEI coordinates the feasibility study for the establishment of Hub-laboratory internet of things within i4MS initiative.
- AEI administers «Innovation Portal» (www.inno.lviv.ua), an effective dissemination tool with mailing database of more than 7000 emails of innovative SMEs and R&D organizations.

Areas of interest in interregional European collaboration

- International cooperation in ICT, new media, content and creative industries
- Implementation digital agenda in Europe
- Internet of Things, smart cities
- Innovation and Entrepreneurship support
- ICT in Health and ICT in Energy
- Promotion of renewable energy sources
- Sustainable energy efficient construction and skills in the building sector
- Promoting mental health and well-being among youth
- New knowledge and technologies
- Science with and for Society

PREDA Ltd.

Lower Silesian Voivodeship / Wrocław, Poland

PREDA is a private limited company established in Poland in 2000.

The company's activity focuses on solving energy problems - especially in local communities. Important elements of our core business include energy planning, energetic audits, change of supplier of electricity and gas using an electronic auction realized on our own platform, energy performance contracting, implementation activities in the field of energy efficiency in street lighting and energy management in buildings.

We aim to supply the highest quality products to satisfy the requirements of our customers.

Knowledge, expertise, products and services

We offer a specialized street LED lamp suitable for efficient outdoor lighting. The lamp does not require the exchange of the luminaire, so it can be installed in conventional luminaires. The lamp can significantly reduce the cost of electricity consumption (by 70%), and at the same time improve the quality of light. Unlike other LED lighting sources, the product has an innovative and programmable calendar that allows it to change LED power depending on the time of night, appropriate for the determined class of the road. The lamp is suitable for lighting of roads and streets, parking areas, parks and pedestrian routes, industrial and commercial facilities.

**Modernization of public lighting systems, illumination projects.
Implementation of energy management systems in buildings.**

We want to expand our international presence and we seek distributors with a good understanding of lighting systems



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